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DOCTORAL DISSERTATION:

The Social Adjustment In Preschool Age. The Role Of Socio-Emotional Competence And Teacher-Child Relationship Quality On Peer Acceptance

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CHAPTER I

General Introduction

Introduction

The preschool/kindergarten represents for many children the first social arena outside the family context where children have the opportunity to interact with a relatively large number of peers, (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Martin, Fabes, Hanish, & Hollenstein, 2005), to build up positive relationships with teachers (Birch & Ladd, 1998; O'Connor, 2010; Palermo, Hanish, Martin, Fabes, & Reiser, 2007), and improve their social ability, such as cooperation and empathy for the feelings of others (Baumgartner & Strayer, 2008; Ladd, 2003; Shin & Kim, 2008).

When children enter preschool/kindergarten, the interaction with new peer becomes important and complex, with evidence of particular friendships. In preschool classroom some children tend to play together, others play with many different peers, and others play alone (Martin et al., 2005).

The success in relationships with peers and peer acceptance represent a crucial developmental task and failure in this creates severe a risk of maladjustment over time (Ladd, 2006; Denham et al., 2003). In this regard, peer acceptance may be conceptualized as one of the best indices of children's social functioning and adjustment during the preschool period (Mostow, Izard, Fine, & Trentacosta, 2002). It has been assumed that children who show positive interaction with peers and cooperative play tend to be more accepted by peers than aggressive or withdrawn children, who demonstrate negative peer contact and engage in disruptive play (Seven, 2010).

Children who are able to navigate effectively the preschool social environment are in a good position to benefit from such early experiences as they progress to primary school. Conversely, many children (e.g. shy, inhibited, or socially unskilled children) arrive in preschool/kindergarten unprepared to meet the social context of the classroom, showing difficulty in following the teacher's

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instructions, and in establishing positive interaction with new peers (Rimm-Kaufman, Pianta, & Cox, 2000; Rudasill & Konold, 2008). The transition to primary school is more critical for those children, who experience difficulty in the social life of preschool/kindergarten.

Researchers have examined a number of factors which are related to peer acceptance during preschool/kindergarten period, including social and emotional competences, and the quality of teacher-child relationship (Denham, McKinley,Couchoud, & Holt, 1990; Mostow et al., 2002). However, few studies have analyzed the complex association between these factors in a model of peer acceptance (Denham et al., 2003; Malti, 2006).

The above mentioned factors, children's individual characteristics, quality of child-teacher relationships, and children's social behaviors, should be considered in the light of the "child-by-environment model" recently suggested by Ladd (2003), and also called the "Transactional Model of Development" (Sameroff, 2010; Sameroff & Mackenzie, 2003).

Previously, two different perspective had grown up around the study of children's social adjustment. The first gave more attention to children's dispositions which could be related to later adjustment/maladjustment (or "child effect models"), and the other considered the importance of social relationships as an antecedent of children's social adjustment/maladjustment (or "socialization effects models").

The "child effect models" assumed that children's behavioral dispositions were precursors of later function/dysfunction. A sizeable proportion of literature was designed to investigate the role of aggressive and withdrawal behavioral dispositions on children's adjustment. Of these two behavioral styles, aggressive behavior has been a focal point for research more than withdrawn behavior (Ladd, 2003). In this regard, the research assumed that individual differences in children's

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aggressive behavior were stable over time and were predictors of later social and academic maladjustment (Crick, Ostrov, & Werner, 2006; Ladd & Price, 1987; Prinstein, Boergers, & Vernberg, 2001). Less is known about the role of children's withdrawn behavior and school adjustment. The researchers documented controversial results regarding the relation between withdrawn children and later risk of adjustment problems (Hanish, Eisenberg, Fabes, Spinrad, Ryan, & Schmidt, 2004).

Conversely, the "socialization effect models" underlined that children's early adjustment is influenced by their social relationships with others (e.g. parents, peers, or teachers). Essentially, the researchers analyzed whether participation in poor or dysfunctional relationships (with peers, parents, or teachers) was associated with the later emergence of dysfunctional symptoms. For example, the literature demonstrated the role of the quality of children's friendships on children's later emotional wellbeing in terms of self esteem or social support during early and middle grade school (Berndt & Keefe, 1996; Ladd, Kochenderfer, & Coleman, 1996; Parker & Asher, 1993).

An alternative perspective for studying human adjustment as a complex developmental process, is afforded by the "child-by-environment model". This model asserts that children's social adaptation is not solely a function of either the children themselves nor of their environment, but rather a combination of both. More specifically, the model conceptualizes the link between the contextual factors (e.g., quality of child-teacher relationship) and child characteristics (e.g., children's social behavior) (Rudasill, 2011), giving attention to how a child's particular characteristics and environment factors are related to each other and influence children's social adjustment (Ladd, 2003). Thus, the child's development depends on interaction with the child' s

context (e.g. family, or school). The model assigns the same importance to the child and to the context in influencing the child's adjustment (Sameroff & MacKenzie, 2003).

The reason for considering the child according to the environment model in the current dissertation was principally to investigate the relations between children's socio-emotional competence and the quality of teacher-child relationship. The specific purpose of this current dissertation aims at understanding better the role of each component (children's socio-emotional competence and teacher-child relationship) in peer acceptance, which is an important index of children's social adjustment.

A brief outline of the various components that contribute to understanding children's social adjustment is presented below, before illustrating the three different studies undertaken for the present dissertation.

Emotional Competence as an antecedent of preschoolers' social competence

According to Susanne Denham (2006), emotional competence includes emotional expressiveness, emotion knowledge and regulation. Each of these key aspects contributes to the social developmental task from 2 to 5 years: successful peer interactions (Parke, 1994; Saarni, 1990).

Specifically, children who are prone to expressing positive affect are better liked by their peers and teachers, rather than children who show more negative emotions, especially anger (Denham, 2006; Denham et al., 2003). Children who express more positive rather than negative emotions are rated also by teachers to have more friendships and to be more liked by peers (Denham et al., 1990). In other words, patterns of emotional expressiveness are potent interpersonal supports for interacting with peers and teachers (Denham et al., 2003; Denham et al., 1990).

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Emotion knowledge (the second key component of children's emotional competence) allows an understanding of others' mental states. The preschoolers find it easier to understand positive emotions, such as happy, rather than negative emotions, such as anger or fear (Fabes, Eisenberg, Nyman, & Michealieu, 1991; Manstead, 1993; Wyden & Russell, 2008). A child who knows and comprehends emotions is in a better position to react appropriately to their peer's display. In fact children who exhibit emotion understanding are more prosocial, more accepted by their peers, and are rated as more socially competent by the teachers.

Finally, the last component of young children's emotional competence is emotion regulation, such as the ability to control and modify the intensity and the type of emotional reactions (Cole, Martin, & Dennis, 2004; Eisenberg & Spinrad, 2004). In preschool, this ability is expressed through behaviors such as getting in line, taking turns, or interacting with others (Cole et al., 2004). Conversely, disgregulation may negatively influence social adjustment, exposing children to outbursts of temper or distress that interfere with social interactions (Denham, 2006).

Accuracy in perceiving emotion cues, ability to recognize and express emotions, ability to identify causes of emotions, and capacity to regulate one's own emotions so as to inhibit a dominant reaction and activate a subdominant response (Rothbart & Bates, 2006), facilitate adaptive social behavior, increase the likelihood of being accepted by peers (Izard et al. 2001).

Thus, emotional competence may be considered an antecedent of social competence. The two constructs, although related, are separable, as Rose-Krasnor (1997) and Denham (2006) underlined. The model of Socio - Emotional Competence (Denham, 2006; Denham et al., 2003; Denham et al., 2009) assumes that emotional competence represents an antecedent of social competence or ability to create and sustain positive relationships with others (Rose-Krasnor, Rubin, Booth, & Coplan, 1996).

At the most abstract level, social competence, one of the most elusive constructs (Durkin,1995), may be defined as "effectiveness in interaction" or "the ability to achieve personal goals in social interactions, while maintaining positive relationships with others over time and across situations" (Rubin & Rose-Krasnor, 1992, pp.285). In the case of preschoolers, effectiveness refers mainly to the developmental task of positive engagement with others, for example peers and teachers.

In other words, socially competent behavior, such as prosocial behavior and negotiation, appear to be associated with positive peer relationships that in turn are related to successful socio-emotional adjustment (Eisenberg & Fabes, 1995; Rubin, Bukowsky, & Parker, 2006).

Conversely, anxiety-withdrawn children display a limited range of social skills as if trapped in an approach-avoidance conflict (Asendorpf, 1990). They are interested in playing with other children but, at the same time, demonstrate difficulties in initiating or maintaining social interaction because they are too anxious and apprehensive. According to Eisenberg et al. (1998), these children are prone to being overwhelmed by their negative emotions, and their inability to regulate their own personal feelings compromises their involvement in peer relationships.

Similarly, anger- aggressive behavior tends to be negatively related to empathy. Lower levels of empathy may be associated with externalizing behavior, including aggressive actions directed toward peers (Strayer, & Roberts, 2004). Aggression is closely linked to peer rejection: from infancy to adolescence, aggression represents a strong predictor of adjustment problems, first of all in peer rejection, but also in academic failure and school dropout (Coie & Dodge, 1998).

Thus, a large body of empirical research supports the importance of positive child relationship with peers in the development of young children's social competence and social

adjustment (Baumgartner & Bombi, 2005; Griggs, Gagnon, Huelsman, Kidder-Ashley, & Ballard, 2009; Johnson, Ironsmith, Snow, & Poteat, 2000).

From the family to the social world: peer acceptance

During the preschool period**,** children's relationships outside the family system increase in importance and in frequency (Denham et al., 2009). For most children, the transition to preschool/kindergarten is the first opportunity to interact with larger groups of same-age peers (Coplan & Arbeau, 2008). More specifically, in the preschool context children pass through a tendency to play alone to social interactive play with different peers (Rubin, Bukowski, & Parker, 1998). In the preschool playgroup, children improve their ability to manage conflict with peers (Baumgartner & Strayer, 2008), refine their perspective skills, and advance in their moral reasoning and emotional understanding (Chen, 2003).

The establishment of successful peer relationships is fundamental for the development of social competence and academic engagement and motivation (Coolahan,Fantuzzo, Mendez, & McDermott, 2000; Fantuzzo, Bulotsky-Sheared, Fusco, & McWayne, 2005). Conversely, negative peer interaction are related to more negative behavioral and emotional outcomes. For example, the transition to preschool is more difficult for children who are shy or inhibited and it follows that they may be less liked than their more socially competent peers (Martin et al., 2005).

Peer relationships become more complex with evidence of specific friendships and peer status (Denham et al., 2009). In terms of friendship, children are attracted by peers who are similar to themselves (Baumgartner & Bombi, 2005; Haselager, Hartup, Van Lieshout, & Riksen-Walraven, 1998; Rubin et al., 2006). Haselager et al. (1998) found that behavioral similarities were greater between friends than non friends. For example, it was demonstrated that aggressive children would

be more likely to have friends who were aggressive, and withdrawn children would have friends who were withdrawn. In other words, friendship can be a risk factor for these children because there are behavioral similarities in aggression or withdrawal (Rubin et al., 2006).

Regarding peer status, researchers have long studied perception of children of their peers in terms of liking or disliking (Coie, Dodge, & Coppotelli, 1982; LaFontana & Cillessen, 2002). A large number of studies focused their attention on rejected children (disliked by many peers and liked by few) because these children showed poor social functioning, aggression or withdrawal with peers (Baumgartner & Bombi, 2005). Conversely, popular children (liked by many children and disliked by few) demonstrated empathy, socially competent behavior, and school engagement. However, some popular children showed aggression or negative interaction with peers (Rodkin,Farmer, Pearl,& Van Aker, 2000; Vaughn et al., 2003). An additional group composed of controversial children, demonstrated more strongly social impact. In fact, controversial children are liked by many children and disliked by many because they express a combination of aggressive and socially competent behavior (Coie & Dodge, 1998). In other words, these groups represent opposite extremes of a continuous of peer acceptance that underlines different social status groups (LaFontana & Cillessen, 2002).

Some of the researchers suggest that positive peer relationships and acceptance are related to children's academic and social adjustment/maladjustment during the preschool period (Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006; Ladd, 2003; Ladd, Herald-Brown, & Reiser, 2008; Parker & Asher, 1987). Thus, peer acceptance may be conceptualized as a key task in early childhood and the best index of children's social functioning (Hamre & Pianta, 2001; Mostow et al., 2002). In other words, socially accepted children are more cooperative, more friendly, and more sociable than their rejected classmates (Mostow et al., 2002).

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Teacher as a resource in the social world

      As children enter kindergarten, the teacher also represents an important resource to navigate in the new environment and to organize children's relationships with peers (Mitchell-Copeland, Denham, & DeMulder, 1997; Hamilton & Howes, 1992; Hamre, Pianta, Downer, & Mashburn, 2008; Pianta,1999; Silva et al., 2011).

      The research on child-teacher relationship is nested within the Attachment Theory Perspective (Howes, 2000). The assumption is that children use relationships with non parental adults, such as teachers, as working models to organize their school activities. More specifically, these relationships determine the ability of the child to form relationships with others and explore new contexts (Ainsworth, 1989; Ainsworth & Bowlby, 1991). When children form secure attachments, they demonstrate positive social skills, whereas insecure attachments are associated with lower social competent behavior (Koepke & Harkins, 2008; O'Connor & McCartney, 2006).

      The teacher-child relationship can be characterized by closeness (e.g., reciprocal support and warmth), conflict (e.g. characterized by tension, anger, or aggression), or dependency (e.g., children's over-dependence on their teacher).

      Literature demonstrates that the quality of teacher-child relationship plays an important role in the development of children's social competence and children's academic adjustment (Ly, Zhou, Chu, & Chen, 2012; Pianta & Stuhlman, 2004). Children who have a warm and secure relationship with their teacher may use teachers as resources for other social experiences, especially peer relationships (Ladd, 2006). On the other hand, difficult or excessively dependent children are more likely to be either socially withdrawn or aggressive with peers (Arbeau, Coplan, & Weeks, 2010). The researchers also demonstrated that children experiencing conflictual or dependent relationships

with teachers tend to exhibit dislike and avoidance of school rather than children who have more close relationships with teachers (DiLalla, Marcus, & Wright-Phillips, 2004; Griggs et al., 2009).

Thus, the social-emotional climate in the classroom may be described as a continuum from a positive environment characterized by close, supportive adult-child relationships, prosocial behavior and complex peer interaction, to a hostile environment characterized by conflictual or dependent child-teacher relationships, angry and disruptive children, and poor peer interaction (Leff et al., 2011).

General aims

Little attention has been given to the processes by which the qualities of the teacher–child relationship (e.g., close, dependent, or conflictive) and children's social behavior are related to young children's social adjustment in early childhood (Palermo et al., 2007).

The present dissertation, divided in three studies, investigated the direct and indirect contribution of children's individual characteristics, quality of teacher-child relationships, and social behavior in an integrated model of peer acceptance. We hope to clarify how these factors operate, separately or in conjunction, in the process of peer acceptance.

The Italian educational context represents an interesting case in the landscape of young children's care. In the Italian preschool/kindergarten, the more frequent model is of one or two teachers per class, in which both the teachers and the peer group are, for the most part, unchanged during the three years of preschool/kindergarten. This system follows a "continuity of care" program so that children interact with the same teacher and peers for up to three years.

Study 1 aims at evaluating the internal consistency and the factorial validity of the full Student Teacher Relationship Scale (STRS) and Social Competence and Behavior Evaluation scale (SCBE-30) that represent two instruments widely used in international research to measure the teachers' perception of their relationships with each child and of children's social competent/incompetent behaviors. To date, no study has examined the factorial validity of the scales, using both Exploratory Factorial Analysis (EFA) and Confirmatory Factorial Analysis (CFA) in Italian children aged from 3 to 6 years.

Using the results of study 1, study 2 aims at examining the relations between the quality of teacher-child relationship, children's social-emotional behavior and peer acceptance (likability) in a sample of Italian preschool-aged children. Contrary to other studies, we used multiple informants (teachers, children themselves, and peers) and multiple methods (interviews with children, sociometric testing, and assessment scales).

Study 3 aims at analyzing the relations between the quality of teacher-child relationship, children's social-emotional behavior (anxiety-withdrawal, anger-aggression, and social competence), and peer likability in a longitudinal perspective. Less attention is given to the relation between withdrawal behavior and school adjustment over time. Given the small sample size, our hypotheses regarding the relation between anxiety-withdrawal and peer likability was somewhat exploratory.

These three studies (independent but related) contribute to scientific knowledge, because no studies have been conducted on this topic using samples of Italian preschoolers.

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CHAPTER II

Study 1. Applicability of the Student-Teacher Relationship Scale (STRS) and the Social Competence and Behavior Evaluation Scale (SCBE) in a Italian preschoolers' sample

Study 1

Applicability of the Student-Teacher Relationship Scale (STRS) and the Social Competence and Behavior Evaluation Scale (SCBE) in a Italian preschoolers' sample

Introduction

It has been widely demonstrated that when preschoolers enter school for the first time they encounter new challenges and opportunities (Bush & Ladd, 2001; Bush, Ladd, & Herald, 2006). In this period, the success in relationships with peers and teachers represents a crucial developmental task (Denham et al., 2003) and an important indicator of children's social adjustment (Ladd, 2006; Ladd, Herald-Brown, & Reiser, 2008; Mostow, Izard, Fine, & Trentacosta, 2002; Parker & Asher, 1987). A characteristic associated with success in relationships with peers and teachers is socially competent behavior, defined as effectiveness in appropriate social interaction (Denham, 2006; Rose-Krasnor, 1997; Rudasill & Konold, 2008). Research suggests that children with relatively high levels of social competence are accepted by peers (Blandon, Calkins, Grimm, Keane, & O'Brien, 2010; Spinrad et al., 2004; Spivack & Howes, 2011), feel more positive about school, and participate more in school (Birch & Ladd, 1997; Ladd, Kochenderfer, & Coleman, 1996). Conversely, the non success in social relationships can create severe risks of social maladjustment over time (Buhs et al., 2006; Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Ladd, 2006). In fact, the socially incompetent children demonstrate more behavior problems, peer rejection, poor school performance, than socially competent children (Bierman, 2004; Chen & Jiang, 2002; Malti, 2006).

As children enter kindergarten, teachers represent an important resource to navigate in the new environment and to organize children's relationships with peers (Copeland-Mitchell, Denham, & DeMulder, 1997; Hamilton & Howes, 1992; Hamre, Pianta, Downer, & Mashburn, 2008; Pianta, 1999; Silva et al., 2011). Specifically, robust evidence underlines the role of teacher-child relationship in children's social and academic adjustment (Mashburn et al., 2008; Palermo,Hanish, Martin, Fabes, & Reiser, 2007; Silva et al., 2011). For example, in the past decade, a number of studies analyzed the impact of the quality of teacher-child relationship and showed that positive teacher-child relationships are associated with social competent behavior with peers, school liking and peer acceptance (Birch & Ladd, 1997; Hamre & Pianta, 2006; Ladd, Birch, & Bush, 1999); on the other hand, negative teacher-child relationships are related to aggressive or anxiety-withdrawal behavior with peers, school avoidance, lower levels of classroom participation, and peer rejection (Murray & Murray, 2004; Pianta, Nimetz, & Bennett, 1997).

These results suggest that it is important to give systematic attention to the study of teacher-child relationship and of children's social behaviors during the first years of kindergarten, where children have the possibility to interact for the first time with peers and teachers.

In the last two decades, teacher-child relationships and children's social behavior with peers and teachers at school have been studied using different methodological approaches (Butovskaya & Demianovitsch, 2002; Gregoriadis & Tsigilis, 2008) such as direct observation of children's interaction, interviews with children, teachers, and parents, and psychological questionnaires completed by teachers and parents.

Two instruments widely used in the United States, Canada, Europe, and Asia that measure the teachers' perception of children's social competent/incompetent behaviors are the Student

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Teacher Relationship Scale (STRS) and the Social Competence and Behavior Evaluation Scale (SCBE). In order to study teacher-child relationships in kindergarten and through early years of primary school, Pianta and his colleagues (Pianta, 2001; Pianta &Nimetz, 1989,1991) developed in the American educational setting an instrument called the Student Teacher Relationship Scale (STRS). In the same cultural context, LaFreniere & Dumas (1992, 1996) developed the Social Competence and Behavior Evaluation Scale (SCBE) for the evaluation of teacher's perception about children's social behaviors with others.

The Student Teacher Relationship Scale (STRS)

The STRS is designed to assess teacher-child relationship quality from the teachers' perspective and teachers' perceptions about children's feelings toward them. The scale is based on the attachment theory, assuming that teachers can represent a secure base from which children interact with peers (Arbeau, Coplan, & Weeks, 2010) and explore the new environment (Koepke & Harkins, 2008). In the frame of the attachment theory, Howes (2000) underlined how children with insecure relationships with teachers showed more negative peer relationships, characterized by antisocial or avoidant behavior, and less positive attitudes toward school than children with secure relationships with teachers.

STRS represents the only self report measure used in international research to assess the teachers' view of their relationships with children in the 4 to 8 year age range. Many studies were carried out with STRS scale in different cultural contexts. However, the full STRS scale with children under five years old was used in a few studies (Palermo et al., 2007; Solheim, Berg-Nielsen, & Wichstrom, 2011). The full version of the scale (Pianta, 2001) consists of 28 item rated on the 5-point Likert scale and three subscales: Conflict, Closeness, and Dependency. The conflict

subscale describes interactions between teachers and children characterized by contrast and opposition that may develop negative feelings in children toward school and disengagement in classroom activities (Birch & Ladd, 1997; Webb & Neuharth-Pritchett, 2011). The closeness subscale deals with the degree of warmth and openness in the relationship with children (Doumen et al., 2008), that may promote in children positive attitudes and feelings toward school (Burchinal, Cryer, Clifford, & Howes, 2002; Webb & Neuharth - Pritchett, 2011). Finally, the dependency subscale is characterized by an overly dependent behavior of children toward teachers which prevents children from exploring their classroom environment. In this regard, Birch & Ladd (1997) suggest that dependent teacher-child relationships may hinder positive attitudes and engagement in school and develop negative interactions between child and classmates.

Pianta (2001) tested the dimensionality of the scale using an exploratory factor analysis. In particular, the author obtained a three factor solution namely Conflict, Dependency, and Closeness respectively. Estimates of internal consistency for each factor were obtained using Cronbach's alpha method, and the author found a high reliability for closeness (.86) and conflict (.92) factors but a low reliability for dependency (.64). Because of this, the author recommended interpreting the dependency factor with caution and not isolating it from other two factors.

From the study of Pianta (2001), the last decade has seen the rise of elaborate testing on the dimensionality and applicability of the STRS in children from 5 to 9 years old in different cultural contexts, with the exception of the study conducted by Solheim at al. (2011) on a population of children under five years old. The study of dimensionality of the STRS is conducted using statistical techniques (e.g. exploratory factorial analysis or confirmatory factorial analysis) that show different results in different cultural contexts. For example Cornellisen and Verschueren (2002) examining

the psychometric characteristics of the STRS with a confirmatory factorial analysis in Belgium kindergarten-aged sample did not find the same dimensional structure of the original scale and concluded that the three factors solution was not tenable. In particular the authors found a problem with the dependency subscale and decided to consider two dimensions in their final version: closeness and conflict respectively. On the other hand, some studies with kindergarten and primary-aged children (see Fraire, Longobardi, & Sclavo, 2008), using an exploratory factorial analysis, have shown the same three-factor structure proposed by Pianta (2001)but with a few items eliminated.

Thus, different studies were in agreement on the validity of closeness and conflict factors, and in disagreement on the validity of dependency factor. Consequently, some studies dropped the dependency factor or combined it with the conflict factor (Cornellisen & Verschueren, 2002; Rydell, Bohlin, & Thorell, 2005), others have considered the dependency factor with all its items (Griggs, Gagnon, Huelsman, Kidder-Ashley, & Ballard, 2009), and other studies deleted items with poor psychometric properties (Solheim et al., 2011).

Recent research has shown different relations among the three subscales of the STRS (Arbeau et al., 2010; Palermo et al., 2007; Pianta, 2001). More specifically, an analysis of ten international studies from 2001 to 2011 show: a) a negative relation between conflict and closeness (mean among studies= -.37, range= -.11 to -.48); b) a positive association between dependency and conflict factors (mean among studies= .39, range= .06 to .67); and c) a positive or negative relation between dependency and closeness (mean among studies= .05, range= -.09 to .35). In the Greek educational setting, the dependency subscale is not significantly related to the conflict subscale. However, most of the studies found a positive and significant association between dependency and conflict subscales (Griggs et al., 2009). In addition, the dependency subscale showed different

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relations with the closeness subscale. In fact, some studies indicated a positive relation between dependency and closeness subscales (Gregoriadis & Tsigilis, 2008), other studies indicated a negative relation (Arbeau et al., 2010; Birch & Ladd, 1998; Pianta,1996), whereas yet another set of studies found no significant relation between the two subscales (Henricsson & Rydell, 2004; Spilt & Koomen, 2009). In this regard, there are mixed results on the relation between dependency and closeness. This means that dependency may or may not be viewed as a negative aspect of the relationship between child and teacher, and that the meaning of this relationship may differ according to culture (Solheim et al., 2011).

Research also suggests gender and age differences affect the quality of teacher-child relationship. Controversial results among studies were found on gender differences. In particular Pianta (2001), Arbeau et al. (2010), and Murray & Murray (2004) found gender differences for Closeness and Conflict, while Gregoradis et al., (2008) found differences for all the STRS' scales. Specifically boys tend to form more conflictual relationships with teachers, whereas girls tend to display more closeness and dependent relationships with teachers. Thus, across grade levels, teachers perceive more conflictual, distant and negative relationships with boys than girls (Koepke & Harkins, 2008). In addition, teachers reported more conflict and dependency in relationships with children older than 5 years and more closeness with children younger than 5 years (Pianta, 2001).

The Social Competence and Behavior Evaluation Scale (SCBE)

The Social Competence and Behavior Evaluation scale, short form (SCBE-30) represents an instrument for the evaluation of the affective quality of a child's relationships within the classroom from the teacher's perspective. The scale is based on the construct of socio and emotional competence (Denham 2006; Denham et al., 2003; Denham et al., 2009), assuming that the emotional competence contributes to the social competence or ability to form good interaction with others (Parke, 1990; Saarni, 1990). For example, children who show positive affect are more likely to have good peer relationships and respond more socially to peers' emotions than children who show negative affect (Denham, 2006; Eisenberg et al., 1995). In other words, this scale identifies social behavior that arises from the ability to modulate affects (Blair, Denham, Kochanoff, & Whipple, 2004).

The SCBE-30 represented a measure widely used for children from 30 to 78 months. In the last ten years, the scale is used in different international settings, such as United States, China, and Europe, to study children's socio-emotional development in cross-sectional and longitudinal researches (Venet, Bigras, & Normandeau, 2001).

The short form (derived by the original SCBE-80 version) is composed by 30 item rated on 6-point Likert scale and three subscales: two distinct patterns of maladaptive behavior (the Anger-Aggression or AA and Anxiety-Withdrawal or AW subscales) and one adaptive pattern (the Social Competence or SC subscale). The AA subscale reflects children's angry, aggressive, and irritable behaviors. Children evaluated as angry and aggressive showed negative affect and are unable to regulate negative emotions. The AW subscale is composed of items that measure dependent, anxious, and isolated behaviors. These children spend much of their time alone and unoccupied and

demonstrate little interest in group activities. Finally the SC subscale includes items to assess positive social interaction (e.g., can negotiate solutions, works easily in groups) as well as prosocial behavior/empathy with peers at school (e.g., cooperates, shares toys, comforts others). The socially competent children show positive affect in their interaction and are well appreciated by peers and teachers.

LaFreniere & Dumas (1996) tested the dimensionality of the scale using an exploratory factor analysis. In particular, the authors obtained a three factors solution named Anger-Aggression (AA), Anxiety-Withdrawal (AW) and Social Competence (SC) respectively. Estimates of internal consistency for each factor were obtained using Cronbach's alpha method, and the authors found a high reliability for all three scales, with values from .80 to .92.

From the study of LaFreniere & Dumas (1996), the last decade has seen the rise of elaborate investigations on the dimensionality and applicability of the SCBE in children aged from 3 to 6 years in different cultural contexts. The factorial analyses identified the same three factors of the original version and a high internal consistency of each subscale in all cultural samples examined. The average of values of Cronbach's alpha was .87 for SC, .84 for AW, and .88 for AA respectively (LaFreniere et al., 2002).

Prior research revealed various relations between three subscales. Specifically, AA subscale was significantly negatively related to SC and to AW (Butovskaya & Demianovitsch, 2002; Chen & Jiang, 2002; Shin & Kim, 2008). In addition, most of studies did not find significant associations between AA and AW demonstrating a relative orthogonality between the two subscales (Bigras & Dessen, 2002; Chen & Jiang, 2002; LaFreniere & Dumas, 1996).

Similar to the student-teacher relationship scale, children's gender and age represented important variables to differentiate children's social behavior in all cultures. Specifically, girls showed more SC than boys, whereas boys were higher in AA and AW than girls (Chen & Jiang, 2002). Moreover, the results for age differences demonstrated a strong effect of age on socially competent behavior and a non significant effect on both AA and AW. Specifically, the results indicated a growth of social competence between 3 to 6 year olds (Chen & Jiang, 2002).

The Italian preschool context

The applicability of the STRS and SCBE-30 scales could be of fundamental importance for the assessment of children's behavioral and emotional adjustment in the Italian educational setting. In fact, the Italian educational context would present an interesting case in the landscape of young children's care. Children between the ages of 3 to 6 years are educated in one setting called kindergarten where children spend three years before starting the primary educational program. The majority of Italian kindergarten settings are segregated by age, so classmates are a homogenous group of either three- and four- year olds, or five- to six- year olds. In the Italian kindergarten, the dominant model is one or two teachers per class, in which both the teachers and the peer group are mostly unchanged during the three years of kindergarten. This means that the children interact with the same teachers and peers for a period of three years, and that the teachers represented crucial actors in mediating social interaction among children in the classroom. Thus, the study of the quality of teacher-child and peer relationships using valid and reliable instruments could be of great importance for children's well-being in the Italian kindergarten setting.

Aims of the current study

On this basis, the present study is aimed at contributing to the investigation of the psychometric characteristics of the full STRS and SCBE-30, and of its applicability in an Italian cultural context.

In particular the purposes of the current study have been:

a) to evaluate the internal consistency and the factorial validity of the full STRS and SCBE-30 scales through an exploratory factorial analysis (EFA) and a confirmatory factorial analysis (CFA) considering a group of children aged from 3 to 6 years evaluated by two lead teachers. Specifically, we conducted the EFA analysis with the scores of one teacher and the CFA analysis with the evaluations of the other teacher. To date, no study has examined the factorial validity of the scales, using both factorial analyses, in Italian children aged from 3 to 6 years;

b) to test if children's age and gender differences are associated to differences in teacher-child relationships and in children's behavior as evaluated by the STRS and SCBE-30 scales;

c) to examine the concurrent validity of the obtained subscales through the study of the relations between teacher-child relationship, popularity, rejection, and children's socially competent/incompetent behavior. Considering the results of previous researches (Birch & Ladd, 1998; Pianta, 2001), we expected that the conflict and dependency would be positively associated to antisocial and withdrawn behaviors and peer rejection, and negatively related to prosocial behavior and popularity. Moreover, we expected that closeness would be positively related to prosocial behavior and popularity and negatively associated to antisocial and asocial (withdrawn) behavior. Finally, we expected that the children's socially competent behavior would be positively related

either to peer acceptance and negatively related to peer rejection than children's socially incompetent behavior (Bierman, 2004; Malti, 2006; Spivack & Howes, 2011).

Methods

Participants

Participants in the present study were 493 children between the ages of 36-81 months (M= 54.88 months; *SD* = 11.68) enrolled in one to eight public preschools/kindergartens in Rome, Italy. There were 241 boys and 252 girls coming from middle or middle-high socio-economic status (SES) families. The present sample included 103 children younger than four years old. Each class included an average of 20 children (ranging from 19 to 21) and 12 children were randomly selected in each classroom to participate in the current study. Children were evaluated by two classroom teachers (71 kindergarten teachers in total), and both teachers completed the STRS and SCBE-30 scales. Teachers who participated were all female and were very experienced (ranging from 21-25 years of experience). An informed written parental consent was obtained for each child participating in the study. The study was reviewed and approved by the Ethics Commission of the Department of Developmental and Social Psychology of Sapienza, University of Rome.

Procedures

For this study, teachers completed questionnaires during the spring (May 2009), when the relationship between teachers and children were likely to be quite consolidated. Specifically, teachers completed a packet of questionnaires to assess the teacher-child relationship quality and children's social behavior in class. Previously the teacher administration, school principals and all the parents were contacted to obtain their written consent. In the sample, only children with parental

permission were included in the teachers' evaluations. The teachers were not paid for their

participation.

Measures

The Student-Teacher Relationships Scale (STRS). The STRS scale (Pianta, 2001) is the

only self-report instrument for preschoolers that assesses teacher perceptions of his or her

relationship with a certain child. The twenty-eight STRS items utilize a 5-point Likert scale (ranging

from 1= definitely does not apply to 5=definitely applies) and the items yield measures of three

dimension of teacher-child relationships: Closeness (11 items; e.g. "This child spontaneously shares

information about himself/herself" or "My interaction with this child make me feel effective and

confident"), Conflict (12 items; e.g. "This child and I always seem to be struggling with each other"

or " This child seems me as a source of punishment and criticism"), and Dependency (5 items; e.g.

"This child reacts strongly to separation from me" or "This child asks me to help him/her when

he/she really does not need any help"). Teachers rated each of the items in term of how applicable

each statement was to their relationship with each child. For the present study we used the version of

the STRS that was translated into Italian by Fraire, Longobardi and Sclavo (2008) through a

procedure of back translation. The 28 English items are reported in Table 1, and the Italian version

is reported in Table 2.

Table 1. The STRS Conflict, Dependency, and Closeness subscales Items (English version)

Conflict
ITEM 2 "This child and I always seem to be struggling with each other"
ITEM 11 "This child easily becomes angry with me"
ITEM 13 "This child feels that I treat him/her unfairly"
ITEM 16 "This child seems me as a source of punishment and criticism"
ITEM 18 "This child remains angry or I resistant after being disciplined"
ITEM 19* " When this child is misbehaving, he/she responds well to my look or tone of voice"
ITEM 20 "Dealing with this child drains my energies"
ITEM 22 "When this child is a bad mood, I know we're in for a long and difficult day"
ITEM 23 "This child's feelings toward me can be unpredictable or can change suddenly"
ITEM 24 "Despite my best efforts, I'm uncomfortable with how this child and I get along"
ITEM 25 " This child whines or cries when he/she wants something from me"
ITEM 26 "This child is sneaky or manipulative with me"
Dependency
ITEM 6 " This child appears hurt or embarrassed when I correct him/her"
ITEM 8 "This child react strongly to separation from me"
ITEM 10 "This child is overly dependent on me"
ITEM 14 "This child asks for me help when he/she really does not need help"
ITEM 17 "This child expresses hurt or jealousy when I spend time with other children"
Closeness
ITEM 1 "I share an affectionate, warm relationship with this child"
ITEM 3 "If upset, this child will seek comfort from me"
ITEM 4 * " This child is uncomfortable with physical affection or touch from me"
ITEM 5 "This child values his/her relationships with me"
ITEM 7 "When I praise this child, he/she beams with pride"
ITEM 9 "This child spontaneously shares information about himself/herself"
ITEM 12 "This child tries to please me"
ITEM 15 "It is easy to be in tune with what this child is feeling"
ITEM 21 "I've noticed this child copying my behavior or ways of doing things"
ITEM 27 "This child openly shares his/her feelings and experiences with me"
ITEM 28 "My interactions with this child make me feel effective and confident"

Note. STRS=Student Teacher Relationships Scale; *Reverse scores item

Table 2. The STRS Conflict, Dependency, and Closeness subscales Items (Italian version)

Conflitto
ITEM 2 " Sembra sempre che il bambino ed io siamo in lotta l'uno con l'altro "
ITEM 11 " Il bambino si arrabbia facilmente con me "
ITEM 13 " Il bambino ritiene che io lo tratti ingiustamente "
ITEM 16 " Il bambino mi vede come fonte di punizioni e critiche "
ITEM 18 " Dopo aver ricevuto una punizione, il bambino continua ad essere arrabbiato o oppone resistenza."
ITEM 19* " Quando il bambino si comporta male, reagisce positivamente al mio sguardo o tono di voce. "
ITEM 20 " Avere a che fare con questo bambino prosciuga le mie energie."
ITEM 22 " Quando il bambino è di cattivo umore, so che avremo una lunga e difficile giornata. "
ITEM 23 " I sentimenti del bambino nei miei confronti possono essere imprevedibili o cambiare. "
ITEM 24 " Nonostante tutti i miei sforzi, non mi sento a mio agio nella relazione con il bambino. "
ITEM 25 " Il bambino si lagna o piange quando vuole qualcosa da me. "
ITEM 26 " Il bambino è sfuggente o manipolatore nei miei confronti. "
Dipendenza
ITEM 6 " Il bambino sembra ferito o imbarazzato quando lo correggo. "
ITEM 8 " Il bambino protesta o si ribella quando ci separiamo."
ITEM 10 " Il bambino è eccessivamente dipendente da me."
ITEM 14 " Il bambino mi chiede aiuto anche quando non ne ha realmente bisogno. "
ITEM 17 " Il bambino si mostra ferito o geloso quando passo del tempo insieme ad altri bambini."
Vicinanza
ITEM 1 " Condivido con il bambino un rapporto affettuoso e caloroso. "
ITEM 3 " Se è di cattivo umore, il bambino cerca conforto in me "
ITEM 4 * " Il bambino è a disagio se compio gesti di affetto (es. carezza, abbraccio…) nei suoi confronti. "
ITEM 5 " Il bambino dà valore al suo rapporto con me "
ITEM 7 " Quando lodo il bambino, lui dimostra orgoglio."
ITEM 9 " Il bambino condivide spontaneamente con me informazioni che lo riguardano."
ITEM 12 " Il bambino cerca di essere accomodante con me."
ITEM 15 " È facile essere in sintonia con ciò che il bambino prova."
ITEM 21 " Ho notato che il bambino copia il mio comportamento o i miei modi di fare "
ITEM 27 " Il bambino condivide apertamente con me i suoi sentimenti e le sue esperienze."
ITEM 28 " Le mie interazioni con il bambino mi fanno sentire efficace e fiducioso."

Note. STRS=Student Teacher Relationships Scale; *Reverse scores item

The Social Competence and Behavior Evaluation Short Form (SCBE-30). The SCBE-30 scale (LaFreniere & Dumas, 1996) is designed to identify children's social behavior originating from the ability or inability to regulate affect using teachers' perceptions. The SCBE-30 was adapted from the original 80-item Likert rating scale (LaFreniere, Dumas, Capuano, & Dubeau, 1992). The 30-item scale for children in 30-78 months age range is composed of three subscales: Social Competence (SC), Anger-Aggression (AA), and Anxiety-Withdrawal (AW). Responses were given on a 6-point Likert scale from 1 (never) to 6 (always). The Social Competence subscale consists of 10 items, which indicate well-adjusted and prosocial behavior (e.g. "Cooperates with others" or "Works easily in groups"). The Anger-Aggression subscale is composed of 10 items, which describe anger, aggressive and oppositional behavior (e.g. "Irritable, gets mad easily" or "Defiant when reprimanded"). The Anxiety-Withdrawal subscale is composed by 10 items which describe anxiety, isolated and dependent behavior (e.g. "Isolated from the group" or "Doesn't talk during group activities"). Items and alphas for these measures will be presented later in this article. The scores from each subscale were computed to create scores of social competence, anger-aggression and anxiety-withdrawal for each child.

This scale (and the 80-item version) has been previously translated in Italian context through a procedure of back translation (Ongari, Tomasi, & Zoccotelli, 2007). The 30 English items are reported in Table 3, and the Italian version is reported in Table 4 .

Table 3. The SCBE Anxiety-Withdrawal, Anger-Aggression and Social Competence subscales Items (English version)

Anxiety-Withdrawn
ITEM 1. "Maintains neutral facial expression (doesn't smile or laugh)"
ITEM 2. "Tired"
ITEM 6. "Worries"
ITEM 8. "Timid, afraid (e.g., avoids new situations)"
ITEM 9. "Sad, unhappy or depressed"
ITEM10. "Inhibited or uneasy in the group"
ITEM13. "Inactive, watches other children play"
ITEM15. "Remains apart, isolated from the group"
ITEM21. "Doesn't talk or interact during group activities"
ITEM23. "Goes unnoticed in a group"
Anger-Aggression
ITEM3. "Easily frustrated"
ITEM4. "Gets angry when interrupted"
ITEM5. "Irritable, gets mad easily"
ITEM11. "Screams or yells easily"
ITEM12. "Forces other children to do things they don't' wont to do"
ITEM17. "Hits, bites or kicks other children"
ITEM19. "Gets into conflicts with other children"
ITEM26. "Hits teacher or destroys things when angry with teacher"
ITEM29. "Opposes the teacher's suggestions"
ITEM30. "Defiant when reprimanded"
Social Competence
ITEM 7. "Takes pleasure in own accomplishments"
ITEM14. "Negotiates solutions to conflicts with other children"
ITEM16. "Takes other children and their point of view into account"
ITEM18. "Cooperates with other children"
ITEM20. "Comforts or assists another child in difficulty"
ITEM22. "Attentive towards younger children"
ITEM24. "Works easily in group"
ITEM25. "Shares toys"
ITEM27. "Helps with everyday tasks (e.g., distributes snacks)"
ITEM28. "Accepts compromises when reasons are given"

Note. SCBE= Social Competence and Behavior Evaluation Scale

Table 4. The SCBE Anxiety-Withdrawal, Anger-Aggression, and Social Competence subscales Items (Italian version)

Anxiety- Withdrawal
ITEM 1. "Mantiene un'espressione del viso neutra (non ride, né sorride)"
ITEM 2. "Ha l'aria stanca"
ITEM 6. "Inquieto/a. Molte cose lo/a rendono nervoso/a"
ITEM 8. "Ha paura, fugge o evita le situazioni nuove"
ITEM 9. "Ha l'aria triste, malcontenta e depressa"
ITEM10. "Inibito/a o a disagio nel gruppo dei pari"
ITEM13. "Rimane inattivo e guarda gli altri giocare"
ITEM15. "Resta solo/a in un angolo. Piuttosto solitario/a"
ITEM21. "Inattivo/a (non parla né interagisce) durante una attività di gruppo"
ITEM23. "Passa inosservato/a all'interno del gruppo"
Anger-Aggression
ITEM3. "Facilmente contrariato/a, frustrato/a"
ITEM4. "Esprime malcontento se viene interrotto/a nella sua attività"
ITEM5. "Irritabile. Va facilmente in collera"
ITEM11. "Grida, alza subito la voce"
ITEM12. "Costringe gli altri bambini ad azioni loro sgradite"
ITEM17. "Picchia, morde, calcia gli altri bambini"
ITEM19. "Partecipa ai conflitti tra i bambini"
ITEM26. "Picchia l'insegnante o distrugge oggetti quando è arrabbiato/a con lui"
ITEM29. "Si oppone a ciò che l'insegnante suggerisce"
ITEM30. "Sfida l'insegnante (gli tiene testa) quando viene rimproverato/a"
Social Competence
ITEM 7. "Dimostra piacere nel portare a termine le cose"
ITEM14. "Se è in conflitto con un altro, cerca di negoziare"
ITEM16. "Tiene conto degli altri bambini e del loro punto di vista"
ITEM18. "Coopera con gli altri bambini nelle attività di gruppo"
ITEM20. "Consola o aiuta un compagno in difficoltà"
ITEM22. "E' attento nei confronti dei bambini più piccoli"
ITEM24. "Collabora facilmente alle attività di gruppo"
ITEM25. "Condivide i suoi giocattoli con i compagni"
ITEM27. "Aiuta nelle attività di routines (preparare il tavolo)"
ITEM28. "Accetta i compromessi se gli/le si spiegano le ragioni"

Note. SCBE= Social Competence and Behavior Evaluation Scale

The Sociometric Scale (external criteria). Bombi, Cannoni, Di Norcia, & Valente (2011) adapted at preschool age, the Sociometric Scale developed by Caprara and Pastorelli (1993a, 1993b). The instrument was created to assess children's social behavior (prosociality, aggressiveness and isolation), as well as their sociometric status (popularity, rejection) from the teacher's perspective. The scale consists of four scales with three items each (three items of prosociality, three items of aggressive, three items of popularity, and three items of rejection) and one scale with one item (isolation scale). In the present study, we considered only three items of popularity (e.g. Viene ricercato per condividere attivita' di gruppo in classe) and three item of rejection (e.g. Viene escluso dalle attivita' di gruppo in classe). Teachers rated children on a 3-point scale (ranging from 1= never to 3=always) in terms of how applicable items were to children. The scores from each subscale were computed to create scores of popularity and rejection for each child. Bombi et al. (2011) reported a respectable internal consistency for popularity (Cronbach's alpha .85) and rejection (Cronbach's alpha .64) respectively. In addition to the study of Bombi et al. (2011), we tested a CFA model with popularity and rejection as oblique factors. The model with two factors oblique solution fit the data well (x^2(8,N=493)=46.123, P=.0000, CFI=.97, RMSEA=.109 (.08-.14), SRMR=.03) and the Cronbach's alpha coefficients were .87 for popularity and .85 for rejection. The 6 Italian items are represented in Table 5.

Table 5. The Italian Sociometric Scale

Popularity
ITEM 1. "Viene ricercato per condividere attività di gruppo in classe (ad es.: lavoretti)"
ITEM 2. "Viene ricercato per inviti a casa di altri bambini e altre attività al di fuori della scuola"
ITEM 3. "Viene ricercato per condividere attività fisiche (es: giochi in giardino, palestra)"
Rejection
ITEM 4. "Viene escluso dalle attività di gruppo in classe"
ITEM5. "Viene escluso dagli inviti a casa di altri bambini e da altre attività extra-scolastiche"
ITEM6. "Viene escluso dalle attività fisiche (es: giochi in giardino, palestra)"

Analytic Strategy

An exploratory factor analysis (EFA) using Statistical Package for the Social Science (SPSS 18.0) was used to determine the number of factors of the full STRS and SCBE-30 scales from the data collected from one of the two teachers who evaluated the children.

Using the results of EFA, maximum likelihood confirmatory factor analysis (CFA) using Mplus 5.2 (Muthén & Muthén, 2007) were then applied to the evaluation scores of the other teacher. Three models addressing the multi-dimensionality of STRS scale were examined: a two-factor oblique model (Model 1) hypothesizing two factors, namely, a positive child-teacher relationships (or closeness) factor and a negative child-teacher relationships (or conflict and dependence) factor; a model (Model 2) hypothesizing the three orthogonal factors of closeness, dependency, and conflict; and a model (Model 3) hypothesizing a three-factor oblique solution including closeness, dependency, and conflict, thus representing a variation of model 2 including associations among the three factors. Moreover, three models addressing the multidimensionality of SCBE-30 were examined: a two-factor correlated model (Model 1), with positive social behavior related to the child's ability to regulate affect (or social competence factor) and negative social behavior related to

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the child's inability to regulate affect (or Anxiety-Withdrawal and Anger-Aggression factors) as factors; a model (Model 2) with a three factor orthogonal solution, specifically social competence (SC), anxiety-withdrawal (AW), and anger-aggression (AA) factors; and a model (Model 3) with a three factors oblique solution, specifically social competence (SC), anxiety-withdrawal (AW), and anger-aggression (AA) factors. The model 3 represent a variation of model 2 because include associations among the three factors.

For the evaluation of each model we used fit model indices (as they are less sensitive to sample size than the chi-square statistic) (Kline, 2010). Comparative fit index (CFI), root-mean-square error of approximation (RMSEA) with the interval and p value, standardized root-mean-square residual (SRMR) and Akaike information criterion (AIC) were considered for each model. CFI values above .90 were considered as evidence of good fit (Bollen, 1989), as well as RMSEA values lower than .07 (Browne & Cudeck, 1993) and SRMR values lower than .08 (Kelloway, 1998). The chi-square difference statistic was performed to compare the fit of CFA models and to choose the best model. In addition, the modification indices from each step were used to refine the structure of model chosen (Steenkamp & Baumgartner, 1998).

Cronbach's alpha coefficients were calculated to estimate the reliability of the subscales of the STRS and SCBE-30. Subscales with Cronbach's alpha of 0.70 or greater are considered to have satisfactory internal consistency. Specifically for DeVellis (2003) the criteria to interpret Cronbach's alpha were: unaccettable ($\alpha<0.60$), undesiderable ($\alpha=0.60-0.65$), minimally accettable ($\alpha=0.65-0.70$), respectable ($\alpha=0.70-0.80$) and, very good ($\alpha=0.80-0.90$).

Potential gender and age differences were explored with a series of two-way ANOVAs with age and gender as factors. We considered partial eta squared that is considered as the proportion of

total variation attributable to the factor, excluding other factors (Cohen, 1973; Haase, 1983; Kennedy, 1970). Partial eta squared values > .01 are considered to be small effect sizes, those >.06 are considered to be a moderate effect sizes and, values >.14 are considered to be a large effect size (Cohen, 1988).

Finally, within the structural equation modeling (SEM) using Mplus 5.2 (Muthén & Muthén, 2007), it was possible to test the concurrent validity of each scale with other measures. For the evaluation of each model, we used the same fit model indices that were used to evaluate the CFA models.

Results

EFA of the STRS scale

The EFA analysis conducted on the STRS scores yielded the same number of factors originally reported by Pianta for the original version of scale (Pianta, 2001). In particular, the scree test of eigenvalues (Cattell & Vogelmann, 1977) showed three principal factors. These three factors were: Conflict, Dependency, and Closeness. For each factor, almost all respective items loaded above .30, whereas items that belonged to other factors did not show significant loadings. In particular, item 19 (i.e., "When this child is misbehaving, he/she responds well to my look or tone of voice" on the conflict subscale) and 21 (i.e., "I've noticed this child copying my behavior or ways of doing things" on the closeness subscale) were dropped from further analyses, because they did not load on to their respective factors. Likewise, item 6 (i.e., "This child appears hurt or embarrassed when I correct him/her" on the dependence subscale) and item 4 (i.e., "This child is uncomfortable with physical affection or touch from me" on the closeness subscale) were not further considered, since they showed loadings lower than .30 on to their respective factors. Finally, item 25 (i.e., "This

child whines or cries when he/she wants something from me" on the conflict subscale) was dropped because it loaded both on the Conflict and Dependency factors.

Thus, we used only 23 items of the STRS scale for the following analyses. The cumulative percentages of variance explained and alphas (in parentheses) for the total sample for Conflict, Closeness, and Dependency were, respectively, 24.51% (.86), 39.52% (.85), and 43.65% (.71). Specifically, the Conflict factor had an eigenvalue of 5.64, and accounted for about 24% of the total variance, the Closeness factor had an eigenvalue of 3.45 and accounted for about 15% of the total variance, and the Dependency factor had an eigenvalue of .95 and accounted for about 4% of the total variance. The item loadings of the final principal-axis factor analysis (3 factors' extraction) are reported in Table 6.

Table 6. STRS Item loadings after EFA and correlations among the three factors

Item	Conflict	Closeness	Dependency
Conflict			
ITEM 20 "Dealing with this child drains my energies"	0,94		
ITEM 22 "When this child is a bad mood, I know we're in for a long and difficult day"	0,72		
ITEM 2 "This child and I always seem to be struggling with each other"	0,72		
ITEM 13 "This child feels that I treat him/her unfairly"	0,67		
ITEM 16 "This child seems me as a source of punishment and criticism"	0,60		
ITEM 23 "This child's feelings toward me can be unpredictable or can change suddenly"	0,57		
ITEM 24 "Despite my best efforts, I'm uncomfortable with how this child and I get along"	0,54		
ITEM 11 "This child easily becomes angry with me"	0,51		
ITEM 26 "This child is sneaky or manipulative with me"	0,47		
ITEM 18 "This child remains angry or I resistant after being disciplined"	0,37		
Closeness			
ITEM 9 "This child spontaneously shares information about himself/herself"		0,76	
ITEM 1 "I share an affectionate, warm relationship with this child"		0,73	
ITEM 27 "This child openly shares his/her feelings and experiences with me"		0,72	
ITEM 5 "This child values his/her relationships with me"		0,72	
ITEM 3 "If upset, this child will seek comfort from me"		0,68	
ITEM 28 "My interactions with this child make me feel effective and confident"		0,64	
ITEM 15 "It is easy to be in tune with what this child is feeling"		0,60	
ITEM 7 "When I praise this child, he/she beams with pride"		0,42	
ITEM 12 "This child tries to please me"		0,42	
Dependency			
ITEM 17 "This child expresses hurt or jealousy when I spend time with other children"			0,75
ITEM 8 "This child react strongly to separation from me"			0,71
ITEM 10 "This child is overly dependent on me"			0,63
ITEM 14 "This child asks for me help when he/she really does not need help"			0,43
Correlation among factors	Conflict	Closeness	Dependency
Conflict	1		
Closeness	-0,37	1	
Dependency	0,44	0,14	1

Note. STRS= Student Teacher Relationships Scale; EFA= Exploratory Factor Analysis; Loadings below .30 are not presented.

CFA of STRS scale

The CFA was performed by using the sample covariance matrices to examine the factor structure of the STRS. Models 1 (two correlated factors) and 2 (three orthogonal factors) provided a poor fit to the observed data. Model 3 (three correlated factors) instead improved the fit, even though it was still considered unsatisfactory. Table 7 shows the results of each CFA model.

Table 7. Fit Indices for Confirmatory Factor Analysis of the STRS scale

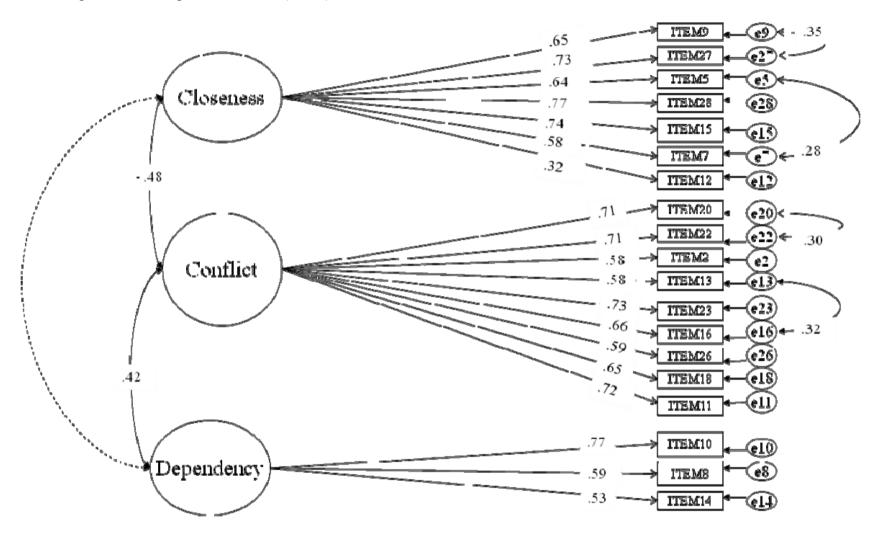| Model	x^2	df[1]	CFI	AIC	RMSEA	CI	P	SRMR
Model 1	1124.155	230	.77	26625.303	.093	(.088-.099)	.000	.13
Model 2	1062.960	230	.79	26564.108	.090	(.084-.095)	.000	.15
Model 3	897.541	227	.83	26404.689	.081	(.076-.087)	.000	.07

Note. Model 1 refers to one negative child-teacher relationship factor and one positive child-teacher relationship factor; Model 2 refers to three orthogonal factors (Conflict, Dependency, and Closeness); Model 3 refers to three oblique factors (Conflict, Dependency, and Closeness). STRS= Student Teacher Relationship Scale; CFI= Comparative Fit Index; AIC= Akaike Information Criterion; RMSEA= Root-Mean-Square Error of Approximation; CI= Confidence Interval; SRMR= Standardized Root-Mean-Square Residual. [1] Each model indicated a significant chi-square with p<.001.

To refine the structure models, the modification indices (ranged 56-24) from each step were used. In particular, the analysis reported co-variations between errors items: for 1) items 20 and 22 (two indicators of the Conflict factor) referred to situations where the child-teacher relationship was perceived as tiring ("Dealing with this child drains my energies" and "When this child is in a bad mood, I know we're in for a long and difficult day"); for 2) items 13 and 16 (two indicators of the conflict factor) referred to child's perception on his/her relationship with the teacher ("This child

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feels that I treat him/her unfairly" and "This child seems me as a source of punishment and criticism"); for 3) items 9 and 27 (two indicators of the closeness factor), both of which referred to relationship of sharing ("This child spontaneously shares information about himself/herself" and "This child openly shares his/her feelings and experiences with me"); and for 4) items 5 and 7 (two indicators of closeness factor) referred to the importance that child gave to his/her relationship with the teacher ("This child values his/her relationships with me" and "When I praise this child, he/she beams with pride"). In addition, two items in the original closeness factor (item 3: "If upset, this child will seek comfort from me" and item 1:"I share an affectionate, warm relationship with this child"), one item in the original dependency factor (item 17 :"This child expresses hurt or jealousy when I spend time with other children"), and one item in the original conflict factor (item 24: "Despite my best efforts, I'm uncomfortable with how this child and I get along") were dropped because they were considered ambiguous with regard to the principal factor. The standardized factor loadings for the modified Model 3 are displayed in Figure 1.Taken together, these changes gave the model an adequate fit to the data (x^2=375.205, df=145; CFI=.93; AIC=21538.113; RMSEA=.06, CI=.05-.07, p=.018; SRMR=.05).

Internal consistency, calculated using the CFA's estimated parameters, was adequate for all factors (conflict .87, closeness .83, and dependency .64). As results from Pianta (2001), reliability for the dependency subscale was not so high.

Figure 1. Path diagram of model 3 (STRS)

Note. Standardized factor loadings are shown on the straight arrows, whereas factors and error term inter-correlations are shown on the curved arrows. + Not Significant; all standardized factor loadings were statistically significant at p<.001.

Relationship between the current version of STRS and the original version of Pianta (2001)

Pearson correlations were computed between the new solution factors of STRS scale with corresponding factors of original version of STRS scale (Pianta, 2001). For the evaluation of the degree between two scales, we considered the guidelines provided by Cohen (1988) for small, medium, and large effects corresponding to correlations 0.1, 0.3, and 0.5, respectively. Although we have eliminated several items in the STRS scale, these correlations were extremely large reflecting the high degree of conceptual unity retained in the current version (see table 8). For this and the next analyses we take in consideration only the scores of the teachers used in the CFAs analyses.

Table 8. Correlations between the current version of STRS and the original version of STRS (Pianta, 2001)

	Conflict	Dependency	Closeness
Conflict (Pianta, 2001)	.98**		
Dependence (Pianta, 2001)		.87**	
Closeness (Pianta, 2001)			.94**

Note. **p<.01

EFA of SCBE-30 scale

The 30 items of the SCBE scale were subjected to a preliminary principal-axis factor analysis with a Promax rotation. Although other methods (see LaFreniere & Dumas, 1996) of factors extraction (e.g. Principal Components analysis) and rotations (e.g. Varimax rotation) were tested, results from these analyses converged using the principal-axis factor analysis/Promax-derivate solution. The same number of factors was extracted as the original scale version

(LaFreniere &Dumas, 1996). The scree test of eigenvalues (Cattell & Vogelmann, 1977) showed three principal factors. These three factors were: Social Competence (SC), Anxiety-Withdrawal (AW) and Anger-Aggression (AA).

Almost all items loaded above .30 on their respective factors while they did not on other factors. We decided to delete items 3 "Easily frustrated" and 6 "Worries" since they presented a double loading on AA and AW factors. Afterwards, we decided to use only 28 items of the SCBE scale for the following analyses.

The cumulative percentages of variance explained and alphas (in parentheses) for SC, AW and AA were respectively 29.48 (.92), 44.62 (.89) and 52.00 (.84). Specifically, the SC factor had an eigenvalue of 8.26 and accounted for about 29% of total variance, the AW factor had an eigenvalue of 4.24 and accounted for about 15% of total variance and the AA factor had an eigenvalue of 2.07 and accounted for about 7% of total variance. The results of the final principal-axis factor analysis (3 factor extraction) are reported in Table 9.

Table 9. SCBE Item loadings after EFA and correlations among the three factors

Item	SC	AW	AA
SC			
ITEM 28 "Accepts compromises when reasons are given"	0,79		
ITEM 27 "Helps with everyday tasks (e.g., distributes snacks)"	0,79		
ITEM22 "Attentive towards younger children"	0,79		
ITEM 18 "Cooperates with other children"	0,75		
ITEM24 "Works easily in group"	0,74		
ITEM 25 "Shares toys"	0,74		
ITEM 20 "Comforts or assists another child in difficulty"	0,72		
ITEM 7 "Takes pleasure in own accomplishments"	0,70		
ITEM 16 "Takes other children and their point of view into account"	0,68		
ITEM 14 "Negotiates solutions to conflicts with other children"	0,67		
AW			
ITEM 9 "Sad, unhappy or depressed"		0,83	
ITEM 15 "Remains apart, isolated from the group"		0,75	
ITEM 2 "Tired"		0,72	
ITEM 1 "Maintains neutral facial expression (doesn't smile or laugh)"		0,71	
ITEM 8 "Timid, afraid (e.g., avoids new situations)"		0,71	
ITEM 13 "Inactive, watches other children play"		0,70	
ITEM 10 "Inhibited or uneasy in the group"		0,65	
ITEM 23 "Goes unnoticed in a group"		0,63	
ITEM 21 "Doesn't talk or interact during group activities"		0,62	
AA			
ITEM 11 "Screams or yells easily"			0,79
ITEM 12 "Forces other children to do things they don't' wont to do"			0,78
ITEM 30 "Defiant when reprimanded"			0,72
ITEM 5 "Irritable, gets mad easily"			0,64
ITEM 29 "Opposes the teacher's suggestions"			0,61
ITEM 19 "Gets into conflicts with other children"			0,61
ITEM 4 "Gets angry when interrupted"			0,53
ITEM 17 "Hits, bites or kicks other children"			0,52
ITEM 26 "Hits teacher or destroys things when angry with teacher"			0,35
Correlation among factors	SC	AW	AA
SC	1		
AW	-0,38	1	
AA	-0,39	-0,02	1

Note. SCBE= Social Competence and Behavior Evaluation; EFA= Exploratory Factor Analysis; SC= Social Competence; AW= Anxiety-Withdrawal; AA= Anger-Aggression; Loadings below .30 are not presented.

CFAs of SCBE-30 scale

The CFA was performed by using the sample co variance matrices to examine the factor structure of the STRS. Models 1 (two oblique factors) and 2 (three orthogonal factors) provided a poor fit to the observed data. Model 3 (three correlated factors) instead improved the fit, even though it was still considered unsatisfactory. Table 10 shows the results of each CFA model.

Table 10. Fit Indices for Confirmatory Factor Analysis of the SCBE scale

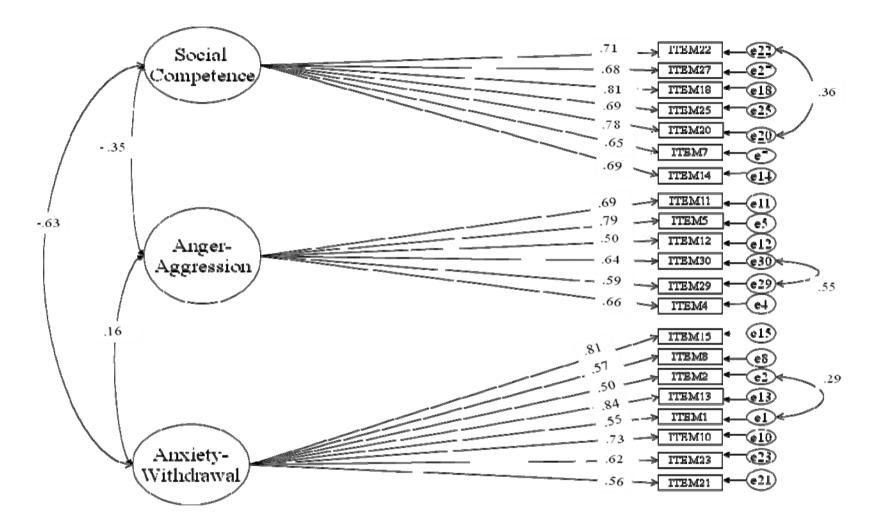| Model	x^2	df[1]	CFI	AIC	RMSEA	CI	P	SRMR
Model 1	21112.170	349	.67	32650.969	.11	.10-.12	.000	.12
Model 2	1467.061	350	.79	32003.859	.08	.08-.09	.000	.17
Model 3	1271.923	347	.83	31814.721	.08	.07-.09	.000	.08

Note. For each teacher, Model 1 refers to one negative social behavior factor and one positive social behavior factor; Model 2 refers to the three orthogonal factors (Social Competence, Anger-Aggression, and Anxiety-Withdrawal); Model 3 refers to three oblique factors (Social Competence, Anger-Aggression and Anxiety-Withdrawal). SCBE= Social Competence and Behavior Evaluation; CFI= Comparative Fit Index; AIC= Akaike Information Criterion; RMSEA= Root-Mean-Square Error of Approximation; CI= Confidence Interval; SRMR= Standardized Root-Mean-Square Residual. [1]Each model indicated a significant chi-square with p<.001.

To refine the structure models, the modification indices (ranged from 103 to 20) from each step were used. In particular, the analysis reported co-variations between error items 1) items 1 and 2 (two indicators of the anxiety-withdrawal factor) referred to how the child is perceived ("Maintains neutral facial expression (doesn't smile or laugh)" and "Tired"; 2) items 29 and 30 (two indicators of the anger-aggression factor) referred to child-teacher relationship ("Opposes the teacher's suggestions " and " Defiant when reprimanded "); and 3) items 20 and 22 (two indicators of

social competence factor) referred both to a typology of prosocial behavior with peers ("Comforts or assists another child in difficulty " and " Attentive towards younger children"). Furthermore, three items in the original social competence factor (item 28:" Accepts compromises when reasons are given ", item 24:"Works easily in group " and item 16:" Takes other children and their point of view into account "), one item in the original anxiety-withdrawal factor (item 9 :" Sad, unhappy or depressed "), and three items of the original anger-aggression factor (item 19: " Gets into conflicts with other children ", item 17: "Hits, bites or kicks other children" and item 26: "Hits teacher or destroys things when angry with teacher") were dropped since they were considered ambiguous with regard to the principal factor. The standardized factor loadings for the modified Model 3 are displayed in Figure 2. Taken together, these changes gave the model an adequate fit to the data (x^2=388.234, df=183; CFI=.94; AIC=24.118.552; RMSEA=.05, CI=.05-.06, p=.311; SRMR=.05).

Internal consistency, calculated using CFA's estimated parameters, was adequate for all factors (social competence .88, anger-aggression .82, and anxiety-withdrawal .85).

Figure 2. Path diagram of model 3 (SCBE)

Note. Standardized factor loadings are shown on the straight arrows, whereas factors and error terms intercorrelations are shown on the curved arrows. All standardized factor loadings were statistically significant at p<.001.

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Relationships between the current version of SCBE scale and the original version of

LaFreniere & Dumas (1996)

Pearson correlations were computed between the new solution factors of SCBE-30 scale with corresponding factors of original version of SCBE-30 scale (Pianta, 2001). For the evaluation of the degree between two scales, we considered the guidelines provided by Cohen (1988) for small, medium, and large effects corresponding to correlations 0.1, 0.3, and 0.5, respectively. Although we have eliminated several items in the SCBE-30 scale, these correlations were extremely large reflecting the high degree of conceptual unity retained in the current version (see table 11). For this and the next analyses we take into consideration only the scores of the teachers used in the CFAs analyses.

Table 11. Correlations between the current version of SCBE and the original version of SCBE (LaFreniere & Dumas, 1996)

	SC	AA	AW
SC (LaFreniere & Dumas, 1996)	.99**		
AA (LaFreniere & Dumas, 1996)		.96**	
AW (LaFreniere & Dumas, 1996)			.98**

Note. **p<.01

Descriptive Analysis

Preliminary analysis revealed no univariate outliers. The skewness and kurtosis indices were judged sufficient to meet the expectations of the analysis (Curran, West, & Finch, 1996). Descriptive statistics for STRS, SCBE, and the Sociometric scales for the total sample are reported in Table 12.

Teachers tended to perceive closer relationships with children rather than conflictual or dependent relationships. However, when Conflict and Dependency scores were added, we obtained a score almost equivalent to the close relationship score (M closeness = 3.74 and M dependency and conflict = 3.39). Our results were consistent with those reported previously by Pianta (2001) and by other studies (Griggs et al., 2009; Gregoriadis & Tsigilis, 2008; Shin & Kim, 2008). For example, Pianta (2001), in a sample of older children (M= 5 years), found similar means: conflict = 2.03, closeness= 3.81, and dependency= 2.15. Similarly, the SC scores were higher than AA and AW scores, but we obtained a behavior problem score (or social incompetence score) almost equivalent to the social competence score (M SC = 3.91 and M AA and AW = 3.81) if we sum AA and AW scores together. The literature (Chen & Jiang, 2002; Butovskaya & Demianovitsch, 2002) reported similar results for the SC, AA, and AW subscales. For example Chen & Jiang (2002) in Chinese children aged from 3 to 6 years found the following means: SC= 3.21, AA=2.00, and AW=2.10. Moreover, children were rated by teachers as more popular than reject (see table 12).

Table 12. Descriptive Statistics for Measured Variables

Subscale	M	SD	Range
Conflict	1.65	.72	1-5
Closeness	3.74	.75	1-5
Dependency	1.74	.78	1-5
SC	3.91	1.04	1-6
AA	1.91	.83	1-6
AW	1.90	.80	1-6
Popularity	2.53	.55	1-3
Rejection	1.29	.44	1-3

Note. The scores for each indicator were computed with the mean of each scale's items. SC=Social Competence; AA=Anger-Aggression; AW=Anxiety-Withdrawal

A series of 2 (gender) X2 (age) ANOVAs were conducted to explore gender and age differences in STRS, SCBE, and the Sociometric scales. The sample was divided into two groups according to their age: younger children (range between 24 to 53 months or < 4,5 years; N=233) and older children (range between 54 to 81 months or > 4,5 years; N=248). For this analysis we did not take into consideration 12 children, because their age was a missing data. Table 13, 14, and 15 show the marginal and cell means results of STRS, SCBE-30, and Sociometric scales.

Table 13. Marginal and Cell Means in STRS scale

Dependent Variable	Age	Gender		
		Girls	Boys	Average
Conflict	Younger Children	1.59	1.83	1.71
	Older Children	1.49	1.72	1.60
	Average	1.54	1.77	1.65
Closeness	Younger Children	3.68	3.59	3.63
	Older Children	3.96	3.72	3.84
	Average	3.82	3.65	3.74
Dependency	Younger Children	1.80	1.85	1.83
	Older Children	1.72	1.62	1.67
	Average	1.76	1.74	1.74

Note. The scores for each indicator were computed with the mean of each scale's items

Table 14. Marginal and Cell Means in SCBE-30 scale

Dependent Variable	Age	Gender		
		Girls	Boys	Average
AA	Younger Children	2.01	1.91	1.96
	Older Children	1.72	2.04	1.88
	Average	1.87	1.98	1.91
AW	Younger Children	1.88	1.98	1.93
	Older Children	1.76	2.01	1.88
	Average	1.82	1.99	1.90
SC	Younger Children	3.82	3.48	3.65
	Older Children	4.32	3.93	4.13
	Average	4.07	3.71	3.91

Note. The scores for each indicator were computed with the mean of each scale's items. SC=Social Competence; AA=Anger-Aggression; AW=Anxiety-Withdrawal

Table 15. Marginal and Cell Means in the Sociometric Scale

Dependent Variable	Age	Gender		
		Girls	Boys	Average
Popularity	Younger Children	2.47	2.36	2.41
	Older Children	2.74	2.54	2.64
	Average	2.61	2.45	2.53
Rejection	Younger Children	1.27	1.35	1.31
	Older Children	1.22	1.30	1.26
	Average	1.24	1.32	1.29

Note. The scores for each indicator were computed with the mean of each scale's items.

Overall, teachers reported a) higher conflict scores with boys ($F(1,433)=11.65, p<.01$; partial eta squared=.03), b) higher closeness scores with girls ($F(1,434)=5.46$, $p<.05$; partial eta squared=.01) and with older children ($F(1,434)=8.39$, $p<.01$; partial eta squared=.02), and c) higher dependency in relationships with younger children ($F(1,434)=4.55$, $p<.05$; partial eta squared=.01). The other main effects and all gender by age interaction were nonsignificant (the .05 level was the alpha value that we were abiding by).

In addition, for SCBE scale (see Table 14) teacher reported a) higher AW scores ($F(1,399)=4.72$, $p<.05$; partial eta squared = .01) with boys (see also Chen & Jiang, 2002; LaFreniere & Dumas, 1996), b) higher SC scores with girls ($F(1,399)=13.07$, $p<.001$; partial eta

squared=.03) and more SC for older children (F(1,399)=22.78, p<.001; partial eta squared=.05). In addition, for AA we found a significant gender by age interaction (F (1,399)=6.31, p<.05; partial eta squared=.02, power=.71). The simple effect of gender was significant for older children, F(1,399)=8.77, p<.01. This indicated that the means between boys and girls in older children among AA were statistically different from one another . The others main effects and the gender by age interactions not reported were nonsignificant (the .05 level was the alpha value that we were abiding by).

For the Sociometric Scale (see Table 15) a) girls were rated as more popular than boys (F(1,386)=7.83, p<.01; partial eta squared= .02, power =.80), and b) older children showed more popularity than younger children (F(1,386)=16.80, p<.001; partial eta squared=.04, power=.70). The others main effects and all the gender by age interactions were nonsignificant (the .05 level was the alpha value that we were abiding by).

Relationships of the STRS Scale with Sociometric Scale in total sample

To examine the concurrent validity, each factor of the three subscales (STRS) was correlated with the Sociometric Scale (Popularity and Rejection). Teacher-child conflict was positively correlated to rejection and inversely correlated to popularity. Teacher-child closeness was positively correlated with popularity and negatively related with rejection. Finally, teacher-child dependency was positively related with rejection and negatively correlated to popularity (see Table 16).

In addition, we compared the magnitude of the correlations among Conflict, Closeness, and Dependency with the various indices of children's social adjustment (Sociometric Scales) using a T-test (Chen & Popovich, 2002). Closeness and Conflict were different for their impact on popularity (closeness was a higher factor of influence in positive popularity rather than conflict which

influenced negative popularity) and rejection (conflict promoted rejection and closeness disadvantaged rejection). Closeness and Dependency were different for their impact on Popularity and Rejection (Dependency promoted Rejection and Closeness disadvantaged Rejection).

Table 16. Correlations among Three Dimensions of the STRS scale and Sociometric Scale

	M	SD	N	Conflict	Closeness	Dependency	Differences between two correlation coefficients		
							Conflict vs Closeness	Conflict vs Dependency	Closeness vs Dependency
Popularity	2.54	.55	400	-.15**	.37**	-.13**	**		**
Rejection	1.28	.44	396	.26**	-.29**	.28**	**		**
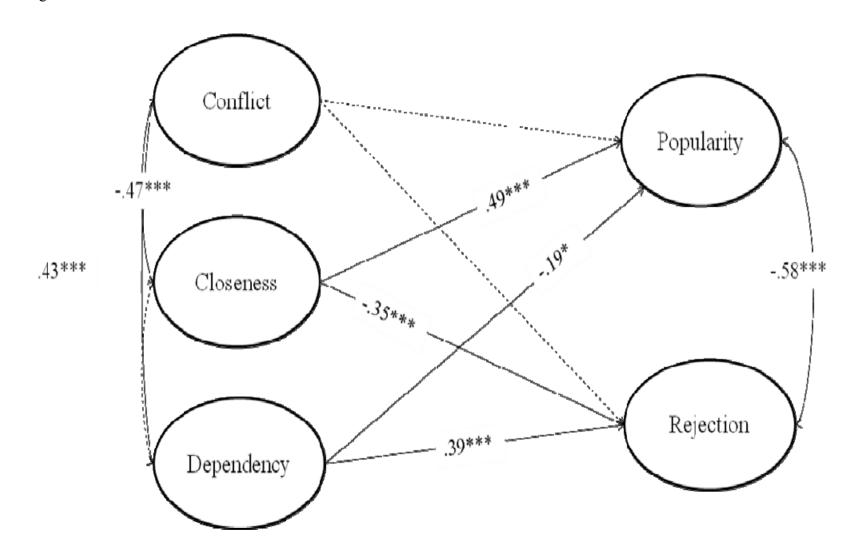
Note. Note. The scores for each indicator were computed with the mean of each scale's items.
**p<.01

Structural Equation Modeling (SEM) using STRS scale

Using the CFA findings, a SEM was employed to understand the relation between the factors of the STRS and Sociometric scales. In particular, we tested the direct effects from the teacher-child relationship variables to popularity and rejection. The fit indices for the final model were x^2 (df =261; p<.0001) =609.411, CFI=.92, RMSEA=.054 (CI=.048 - .059; p=.13), SRMR=.06. The standardized effects coefficients for the final model are displayed in Figure 3.

Specifically, rejection was positively related with dependent teacher-child relationship and negatively associated with closeness. Positive effect was found from closeness to popularity, and a negative association was found between dependency and popularity. Conflict was unrelated with popularity and rejection.

Figure 3. SEM between STRS and Sociometric Scales

Note. Non significant paths are shown on the dashed arrows, whereas significant paths are shown on the straight arrows. *p<.05;***p<.001.

Relationship of the SCBE Scale with the Sociometric Scale in total sample

To examine the concurrent validity, each factor of the three subscales (SCBE) was correlated with the Sociometric Scales (Popularity and Rejection). Social competence (SC) was positively related to popularity and negatively related to rejection. The anger-aggression (AA) was positively correlated to rejection and inversely related to popularity. Additionally, anxiety-withdrawal (AW) was positively related to rejection and negatively related to popularity (see Table 17).

Furthermore, we compared the magnitude of correlations for SC, AA, and AW with the various indices of sociometric status (Sociometric Scales) with t-Test (Chen & Popovich, 2002). In comparison with AW, AA was less negatively related to popularity and less positively related to rejection. AA and SC were different for their impact on popularity and rejection. SC and AW were different for their impact on popularity and rejection (SC disadvantaged Rejection and AW promoted Rejection).

Table 17. Correlations among Three Dimensions of the SCBE scale and Sociometric Scale

							Differences between two correlation coefficients		
	M	**SD**	**N**	**SC**	**AA**	**AW**	**AA vs AW**	**AA vs SC**	**SC vs AW**
Popularity	2.54	.55	400	.52*	-20*	-56*	**	**	**
Rejection	1.28	.44	396	-47*	.24*	.47*	**	**	**

Note. The scores for each indicator were computed with the mean of each scale's items. SC=Social Competence; AA=Anger-Aggression;AW=Anxiety-Withdrawal. **p<.01;*p<.05

Structural Equation Modeling (SEM) using SCBE scale

Using the CFA findings, a SEM was employed to understand the relation between the factors of the SCBE and the sociometric scale. In particular, we tested the direct effects from the children's social behavior variables to popularity and rejection. The fit indices for the final model were x^2 (df =311; p<.0001) =673.302, CFI=.93, RMSEA=.053 (CI=.048 - .059; p=.17), SRMR=.05. The standardized effects coefficients for the final model are displayed in Figure 4.

Results showed that rejection was positively associated with anxiety-withdrawal and anger-aggression and negatively related with social competence. More specifically, the relation between anxiety-withdrawal with rejection was more strong than the association between anger-aggression with rejection (see figure 4). Positive effect was found between social competence and popularity, and negative relations were found between anxiety-withdrawal and popularity. The relation between anxiety-withdrawal and popularity was more strong than the relation between social competence and popularity (see figure 4). Anger-aggression was unrelated to popularity. Finally, there were negative associations between social competence and anxiety-withdrawal and social competence and anger-aggression. Anger-aggression and anxiety-withdrawal were positively related.
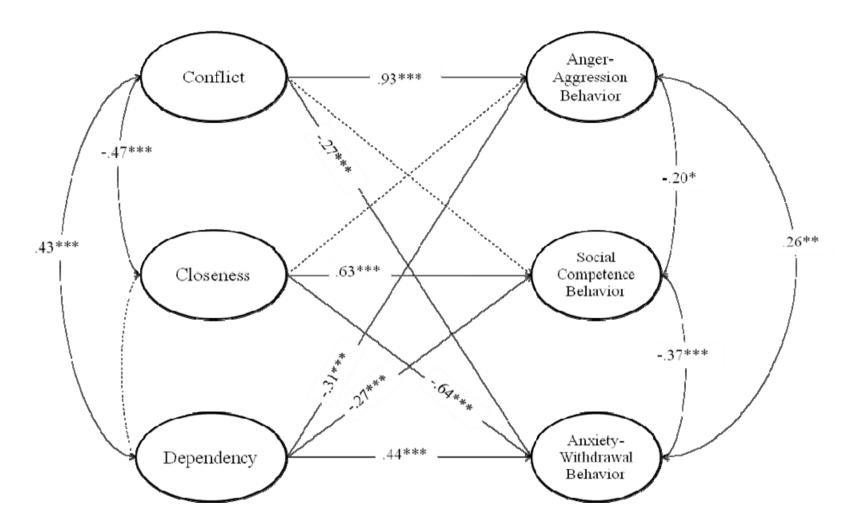
Figure 4. SEM between SCBE and Sociometric Scales

Note. Non significant paths are shown on the dashed arrows, whereas significant paths are shown on the straight arrows. *p<.05;

p<.01;*p<.001

Relation between STRS and SCBE scales

Using the CFA findings, a SEM was employed to understand the relation between the teacher-child relationship qualities and children's social behavior. As supported by literature, we tested the direct effects from the teacher-child relationship variables to children's social competence, anxiety-withdrawal and anger-aggression. The fit indices for the final model were x^2 (df =718; p<.0001) =1472.292, CFI=.90, RMSEA=.048 (CI=.044 - .051; p=.86), SRMR=.06. The standardized effects coefficients for the final model are displayed in Figure 5.

Positive effects were found from teacher-child closeness to social competence as well as from teacher-child dependence to anxiety-withdrawal, and from teacher-child conflict to anger-aggression. In addition, teacher-child closeness was negatively related to anxiety-withdrawal and teacher-child dependency was negatively associated to social competence and anger-aggression. Moreover, teacher-child conflict was negatively related to anxiety-withdrawal. Finally, there was a negative association between conflict and closeness factors and a positive relation between conflict and dependence factors. Closeness and dependence were not significantly related.

Figure 5. SEM between STRS and SCBE Scales

Note. Non significant paths are shown on the dashed arrows, whereas significant paths are shown on the straight arrows. *p<.05; **p<.01;***p<.001.

Discussion

The Student Teacher Relationship Scale (STRS) and the Social Competence and Behavior Evaluation Scale (SCBE-30) represent instruments widely used in international research to understand the quality of teacher-child relationship and the affective quality of the child's relationships within the classroom from the teachers' perspective. The last decade has seen the rise of studies on the applicability of the full STRS and SCBE-30 scales in different educational settings. However, few studies have examined the validity of the scales in children from 3 to 6 years old.

The main goal of this study was to give an additional contribution to the factorial validity of the full STRS and SCBE-30 in an Italian group of preschoolers aged 3 to 6 years using both exploratory factorial analysis (EFA) and confirmatory factorial analysis (CFA). Because the Italian educational setting involves teachers who remain for the most part unchanged during the three years of kindergarten, we considered that the applicability of the STRS and SCBE-30 scales in the Italian context would be of critical importance to the study of the relation between teacher-child relationship quality and the children's resulting development.

Our findings revealed that the modified three-factor versions of the full STRS and SCBE-30 can be considered reliable and valid instruments to examine the quality of teacher-child relationships and children's social behavior in the Italian sample of preschool/kindergarten children. Thus, the original structure of the full STRS scale with three correlated factors (Conflict, Closeness, and Dependency) and of SCBE-30 scale with three correlated factors (social competence, anger-aggression, and anxiety-withdrawal) were replicated. This findings are consistent with other studies for both STRS (Fraire et al., 2008; Solheim et al., 2011) and SCBE-30 (LaFreniere et al., 2002) scales.

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The findings of the current study indicated that some items had poor psychometric properties, as reported in a series of studies, specifically for the STRS scale (Gregoriadis & Tsigilis, 2008; Tsigilis & Gregoriadis, 2008; Webb & Neuharth-Pritchett, 2011; Solheim et al., 2011), In fact, it should be noted that several items were dropped during the EFA and CFA analyses to arrive at final solutions with adequate fit indices and reliability. However, for the STRS scale the current study was in line with what was reported in other studies: for example, item 21 loaded on dependency subscale instead of loading on the closeness subscale (Gregoriadis & Tsigilis, 2008; Webb & Neuharth- Pritchett, 2011), item 25 showed loadings on two factors (i.e., conflict and dependency) (Fraire et al., 2008), and item 6 had a relatively low loading on the dependency subscale (Cornellissen & Verschueren, 2002; Solheim et al., 2011). Also for SCBE-30 we found similar exclusions in other countries (such as China, Russia, and Brazil): for example, item 3 loaded more highly on anxiety-withdrawal factor than anger-aggression factor, and item 6 loaded more highly on anger-aggression than anxiety-withdrawal. This may mean that in our cultural context and others, the word frustration (item 3) expresses anxiety rather than anger, and the word nervous (item 6) is indicative of anger rather than anxiety. Agreement among studies from different cultural contexts on the exclusion of certain items could represent an important element for consideration in future research conducted on the full STRS and SCBE-30 scales and for refining the set of items included in the scales.

The relation between the modified three-factors of STRS indicated a non significant association between dependency and closeness, as in the studies of Spilt & Koomen (2009) and of Henricsson & Rydell (2004). In addition, we found a negative relation between conflict and closeness subscales and a positive relation between conflict and dependency subscales (Arbeau et al., 2010; Cornellissen et al., 2002). As to the negative relation between conflict and closeness

subscale, the more a relationship is perceived as warm and close, the lesser it is perceived as oppositional and negative. In contrast, it is plausible that the positive association between dependence and conflict subscale might signify that the teachers perceive children's dependence as a negative trait-like characteristic. This result was previously shown by Solheim and colleagues (2011). On the other hand, in the Greek educational setting, Gregoriadis & Tsigilis (2008) did not find significant correlation between conflict and dependence, emphasizing the fact that there could be controversy in different cultural contexts about the positive or negative interpretation of the dependence factor.

Regarding the SCBE-30 scale the relations between the modified three-factors indicated a significant and positive relation between anger-aggression and anxiety-withdrawal and a significant negative relation between social competence and anger-aggression and social competence and anxiety-withdrawal. The significant association between anger-aggression and anxiety-withdrawal is in contrast to the findings of previous studies (LaFreniere & Dumas, 1996; Chen & Jiang, 2002) demonstrating a non orthogonality between these two scales. Thus in our sample, fearful and anxious children may be more likely to engage in aggressive and disruptive relations. This finding is consistent with the work of Blair et al. (2004) who found that children rated for showing internalizing behavior (e.g., children who avoid new situations; children sad, unhappy, and depressed) engaged in more externalizing behavior (e.g., children often angry, defiant when reprimanded).

In this study we analyzed gender role in teacher-child relationship quality and children's social behavior. Our results showed significant gender differences among two dimensions of the STRS scale, confirming a partial agreement with findings of Gregoriadis and Tsigilis (2008).

Specifically, our teachers described their relationships with girls with higher scores of closeness and their relationships with boys with higher ratings of conflict. We did not find gender differences in dependent teacher-child relationship. Regarding social behavior, the teachers describe boys as having higher levels of anxiety-withdrawal and anger-aggression and less levels of social competence than girls. These findings are consistent with cultural norms that emphasized more aggressive and independent behavior and less emotional and supportive relationships in boys in comparison with girls. Moreover, our results could reflect teacher's stereotypes that reinforced more social competence behavior in girls and more aggressive behavior in boys (Bussey & Bandura, 1999; Martin & Ruble, 2009).

Consistent with the results of the CFA that showed the validity of the two scales, the results of the current study also underlined the relation between SCBE and STRS, and the association of the STRS and SCBE scales with regard to popularity and rejection. Specifically, our findings demonstrated that children's anxiety-withdrawal was positively associated to dependent teacher-child relationship, that children's anger-aggression was positively related to conflict teacher-child relationship, and that children's social competence was positively associated to close teacher-child relationship. At the same time, popularity was positively related to children's social competence and negatively related to anxiety-withdrawal. Rejection was positively associated to children's anger-aggression and anxiety-withdrawal, and negatively related to social competence. Contrary to the literature that confirms a stronger relation between anger-aggression and rejection rather than the association between anxiety-withdrawal with rejection (Ladd, 2003; Ladd & Burgess, 1999), our results demonstrated a stronger relation between anxiety-withdrawal and rejection. Contrary to other studies that found a positive (or negative) significant relation between popularity and aggression (Hoff, Reese-Weber, Schneider, Stagg, 2009; LaFontana & Cillessen, 2002; Luthar & McMahon,

1996), our results demonstrated that the relation between popularity and anger-aggression behavior was non significant. This means that a reputation for popularity was unrelated to aggressive behavior.

The present study has several strengths. First, the applicability of the full STRS and SCBE-30 versions was examined in a culture other than the United States. In fact, it is important to analyze the validity of the versions in our context because the scales represent self report measures widely used in international research for children from 3 to 8 years old. This study highlighted the fact that a modified-three factor version of the scales can be considered a reliable instrument for measuring teacher-child relationships and children's social behavior in an Italian preschool sample. In addition, the study considered all three aspects of the quality of teacher-child relationships (conflict, dependency, and closeness), whereas some studies have not found the same dimensional structure of the original version.

Despite its strengths, the study does have some limitations. First limitation was that it did not consider the equivalence of factorial validity across gender. In this way, the study of Solheim and colleagues (2011) for STRS represented the first work that found limited evidence of non variance of the scale. However, our ANOVAs' findings confirmed the results of literature that indicated that girls showed more positive relationship with teachers than their peers of the opposite sex (Howes, Phillipsen, & Peisner-Feinberg, 2000). Secondly, we considered the teacher's perceptions as a unique methodological approach. In fact, although teachers are good observers of child individual differences within the classroom, it would be useful in future research to incorporate information from multiple sources (observation, peer's perception, parents' perception) so as to understand better the phenomena under review (Puig et al., 1999) and to assess the generalizability of findings

across different informants (Palermo et al., 2007). In this direction, the study of Doumen et al. (2008) proposed a number of instruments for the assessment of teacher-child relationship in schools, considering the point of view of external observers, peers, teachers, and child. In addition, subsequent research might consider a cross-cultural investigation of the findings of this study in other cultural contexts, useful for analyzing the quality of teacher-child relationship and children' s social adjustment (Webb & Neuharth-Pritchett, 2011).

Thus, the present work suggests that the full STRS and SCBE-30 scales can be considered reliable instruments in the Italian educational setting. Specifically, the inclusion of the dependency subscale may provide the possibility of classifying children who are at risk for developing withdrawal symptoms. In other words, although the dependency scale seems to show controversial psychometric characteristics and different meanings according to different cultural contexts, the dimension of dependent teacher-child relationship is critical in order to understand school and social adjustment of withdrawn children. Subsequently, the preschool/kindergarten should implement training programs to educate the teachers to improve their relationship with children.

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CHAPTER III

Study 2. Links among socio-emotional competence, teacher-child relationship and peer acceptance in early childhood

<center>**Study 2**</center>

<center>**Links among socio-emotional competence, teacher-child relationship and peer**</center>

acceptance in early childhood.

Introduction

To understand the factors that influence early social adjustment, it is important to consider the quality of children's relationship with their teachers. Given the amount of time that children spend in the classroom, it has been demonstrated that classroom teachers play an important role in children's social, emotional, and academic development (Howes, Phillipsen, & Peisner-Feinberg, 2000; Murray, Murray, & Waas, 2008). Whereas peer relationships have received considerable attention in research, the connection between teacher-child interactions, social development, academic achievement, and peer likability have received less attention (Doumen et al., 2008; Ly, Zhou, Chu, & Chen, 2012; Palermo, Hanish, Martin, Fabes, & Reiser, 2007).

The teacher-child relationship quality

The research on child-teacher relationship is situated within the attachment theory perspective (Howes at al.,2000). It assumes that children use relationship with non parental adults, such as teachers, as working models to organize and actively explore their school environment (Mitchell-Copeland, Denham, & DeMulder, 1997).

The emotional connection between adults and children in school may be a protective factor against future maladjustment (Hamre & Pianta, 2001). Children who have a secure relationship with their teachers may use teachers as resources for other social experiences, especially peer

relationships. On the other hand, insecure children (such as aggressive or dependent children) are more likely to be either socially withdrawn or aggressive in their behavior with peers.

In other words, the social-emotional climate in the classroom may be described as a continuum between positive environments characterized by close, supportive adult-child relationships, prosocial behavior and complex peer interactions, to hostile environments characterized by conflict or dependent child-teacher relationship, angry disruptive child behavior and poor peer interaction.

The quality of the teacher-child relationship can be characterized by closeness, conflict and dependency. A close teacher-child relationship is viewed as a positive relational dimension characterized by reciprocal support, openness and warmth between teacher and child, while conflict and dependent teacher-child relationships are seen as negative relational dimensions, reflecting a lack of security (Koomen, Verschueren, Van Schooten, Jak, & Pianta, 2012). Specifically, conflict teacher-child relationship is characterized by tension, levels of discord, anger, or aggressiveness between child and teacher, while dependency measures the children's possessive behavior toward their teachers that hinders exploration of the school environment (Silva et al., 2011; Webb & Neuharth-Pritchett, 2011). A close teacher-child relationship may allow children to succeed in socio-emotional development and in school (Hamre & Pianta, 2006; Ladd, Birch, & Bush, 1999), conversely conflictual and dependent relationships may prompt children to be uninvolved in school activities and to develop negative attitudes toward school.

The teacher-child relationship has been related to children's social behavior. Several studies indicate that a conflictual relationship with a teacher may be a powerful predictor of children's social maladjustment (O'Connor, Dearing, & Collins, 2011; Xiao & Jin, 2011). In particular, conflictual or dependent teacher-child relationship in kindergarten have been related to behavioral

difficulties and to lower social competence two years later (Pianta & Stuhlman, 2004; Silver,

Measelle, Armstrong, & Essex, 2005). Birch & Ladd (1998) found that negative teacher-child

relationships were related to children's lower prosocial behavior and higher aggressive behavior

with classmates within kindergarten and throughout the first grade. Given such findings, Hamre and

Pianta (2001) suggested that conflictual or dependent teacher-child relationships may lay the

foundation for academic and behavioral problems through elementary and middle school.

Conversely, close relationships with teachers are associated with socially competent behavior

(Griggs, Gagnon, Huelsman, Kidder-Ashley, & Ballard, 2009). Children's social competence has

been linked to children's emotional competence and has been connected to the quality of their

relationship with peers and teachers (Rentzou & Sakellariou, 2011; Rudasill & Konold, 2008). More

specifically, children's emotional competence, or the ability to recognize and express emotions,

facilitate adaptive behavior and increase the likelihood of positive relationship with others, such as

teachers and peers (Denham, 2006;Izard et al., 2001).

Although researchers have focused their work on the role of the teacher-child relationship to

children's social and academic outcomes, few investigators have considered the processes by which

the qualities of teacher-child relationship (close, dependent, and conflictive) predict children's social

behavior and peer acceptance. As a recent exception, using a cross-sectional design, Palermo and

colleagues (2007) tested the meditational role of social behaviors on the link between teacher–child

relationship qualities to peer likability. They found that teacher-child closeness was directly linked

to prosocial behavior and indirectly associated to peer likability through prosocial behavior.

Moreover, conflictual teacher-child relationship quality was indirectly linked to peer rejection

through children's aggressive behavior (Palermo et al., 2007). Finally, teacher-child dependence has

been directly linked to relatively high anxiety behavior with peers (Arbeau, Coplan, & Weeks, 2010; Henricsson & Rydell, 2004) and peer rejection (Hamre & Pianta, 2001).

Given the rapport between the quality of teacher-child relationship, social behavior, and peer status within the United States, it is important to examine whether the same relationship can be found in other countries and cultures. Specifically, the Italian educational context may represent an interesting case in the landscape of young children's care. Children between the ages of 3 to 6 years are educated in one unique rubric called kindergarten where children spend three years before starting the primary educational program. The majority of Italian kindergarten settings are organized by age, so classmates are a homogenous group of either three-four or five to six- year olds. In the Italian kindergarten, the dominant model is one or two teachers per class, in which both the teachers and the peer group are, for the most part, unchanged during the three years of kindergarten. This means that the children interact with the same teachers and peers for a period of three years, and therefore, the teachers are crucial actors to mediate social interaction among children in the classroom. Thus, the quality of teacher-child and peer relationships may have great importance for children's well-being in the Italian kindergarten setting.

Aims of the current study

The purpose of the present study was to examine the role of teacher-child relationship quality (close, conflict, or dependent teacher child relationships) on children's social-emotional behavior and peer acceptance in a sample of Italian preschool-aged children.

The first goal was to investigate the connection between children's emotional competence, social-competent behavior, and peer acceptance. Previous findings show that emotional competence is crucial to children's ability to form relationships with others (Denham et al., 2003; Parke, 1994;

Saarni, 1990). In particular, we expected to find that children who start school with more social-emotional competence would be more capable of forming positive relationships with peers and teachers and would likewise, be more accepted by peers than children with deficits in socio-emotional competence.

The second aim was to examine the relation between teacher-child relationship quality and children's social behavior and peer acceptance. Specifically, in keeping with Palermo and colleagues' (2007) model, we examined whether the teacher-child relationship quality was indirectly related to peer acceptance through the children's social behaviors. We expected that close teacher-child relationships would be associated with socially competent behavior and that conflictive or dependent teacher-child relationships would be related either to problems of anger-aggression or to anxiety-withdrawal. In addition, children's social behavior, and particularly children's socially competent behavior, was expected to express the type of rapport mediated by the quality of the teacher-child relationship and peer acceptance (Ladd et al., 1999; Ladd & Burgess, 2001). We also expected that socially competent behavior was related to peer acceptance and that aggressive or withdrawn behavior was negatively associated with peer group acceptance.

Methods

Participants

Participants were 188 preschool aged children and their lead teachers recruited from five schools in Rome and Naples, Italy. One of the five schools recruited came from Naples (Italy), specifically two of fourteen classroom that participated in the present study. All the teachers (n=14)

were females, and four of them participated in a longitudinal study (study 3 of the current dissertation).

Written parental consent was obtained for all the children. The children came families of middle or middle- high socio-economic status (SES). The children's ages ranged from 23 to 77 months, with age calculated at the beginning of the research, during the spring semester of preschool. The mean age was 53 months, and the SD was 14 months. However, only two children were less than 24 months and fifteen children were older than 72 months. Thus, the sample was composed of children of 2 (n=21, girls= 9), 3 (n=39,girls= 15), 4 (n=52, girls= 27), 5 (n=52,girls= 28) or 6 (n=7, girls=5) years of age. Information on gender was available for all participants; 96 were boys (M age=52 months, DS = 14) and 92 were girls (M age=55 months, DS = 14,5).

Procedures

For the current study, we used data obtained during the school year of 2009 in the spring semester of preschool.

The present study used an approach that considered multiple informants (teachers, children themselves, peers) and multiple methods (children interviews, sociometric procedures, and scales of evaluation).

Specifically, teachers completed evaluation scales on the quality of teacher-child relationship and children's behavior. Teachers completed both scales for each child in their class and each scale took approximately 10 minutes to complete.

Also during the spring semester, children participated in an interview on emotional competence and the peers took part in a sociometric procedure. The sociometric procedure took approximately 15 minutes and the interview 30 minutes for each child. The assessments were conducted individually for each child in a room made available by the preschool and in the presence of one interviewer, well known to the children, after a period of familiarization.

Measures

Teacher-child relationship. Teacher perceptions of their relationship with each child were assessed, using the Student Teacher Relationship Scale (STRS; Pianta, 2001). The STRS represented the only self report instrument in preschool age (typically for children in the age range of 4-8 years) which assessed teacher perception regarding his/her relationship with children. The scale included 28 items measured on a 5- point Likert Scale (1=definitely does not apply, 5=definitely applies) and teachers were asked to rate how applicable each statement was to their relationship with each child in the classroom group. The items yield measures of Closeness, Dependency, and Conflict: the scores from each subscale were averaged to create teacher-child closeness, dependency and conflict rates for each child. The conflict subscale consisted of 12 items that measured teacher-child relationship characterized by tension and anger (e.g. This child and I always seem to be struggling with each other), the closeness subscale included 11 items that evaluated teacher-child relationship characterized by support and cohesion (e.g. This child spontaneously shares information about himself/herself), and the dependency subscale included 5 items that showed a relationship characterized by over dependence of children on teacher (e.g. This child reacts strongly to separation from me). Higher scores on the closeness subscale and lower scores on the dependency and conflict subscales indicate more positive teacher-child relationships.

For the current sample, alpha values for teachers' reports were as follows: Closeness .76; Dependency .66; and Conflict .85. For the present study, since STRS scale were originally written in English, we use the Italian translation conducted by Fraire, Longobardi, and Sclavo (2008) through a procedure of back translation. Moreover, we considered only items that showed a good reliability and validity in previous analyses (see study 1 of the current dissertation).

Children's behavior. Measures of social competence were derived from teacher reports using The Social Competence and Behavior Evaluation Short Form (SCBE-30, LaFreniere & Dumas, 1996) for children in 30-78 months age range. The SCBE-30 comes from the original 80 item-Likert rating scale (LaFreniere, Dumas, Capuano, & Dubeau, 1992) and is composed of 30 items, on a 6-point Likert scale, and three subscales, specifically: social competence, anger-aggression and anxiety-withdrawal subscales. Each subscale taps social behavior that depends by children's ability or inability to modulate affect (Blair, Denham, Kochanoff, &Wipple, 2004). In fact, the subscales include items that overlap conceptually with the measure of temperament and emotional regulation. The social competence subscale was composed of 10 items. The subscale is based on a relatively global construct of socio-emotional competence (Denham 2006), and includes items to assess peer competence and positive social interaction (e.g., can negotiate solutions, works easily in groups) as well as prosocial behavior/empathy (e.g., cooperates, comforts others). The anger-aggression subscale consists of 10 items and described aggression and impulsivity behavior (e.g., "Irritable, gets mad easily"), and the anxiety-withdrawal subscale consists of 10 items and is characterized by sadness, anxiety, and inhibition behavior (e.g., "Doesn't talk during group activities"). The scores from each subscale were averaged to create social competence, anger-aggression and anxiety-withdrawal rates for each child. For this sample, alpha values for the teachers' reports were as follows: Social Competence .84; anger-aggression .79; and anxiety-

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withdrawal .87. For the present study we use the Italian translation conducted by Ongari, Tomasi e Zoccotelli (2007) for SCBE-80. Moreover, we considered only items that showed a good reliability and validity in previous analyses (see study 1 of the current dissertation).

Emotional Competence. Children's understanding of emotion was assessed using the Denham's Affective Knowledge test (AKT; 1986, 2006). Children were asked to name four basic emotions from drawings of four faces, depicting happy, sad, angry and frightened expressions (expressive session). Then children were asked to identify each face non- verbally, by pointing (receptive session). The order of presentation was random for each emotion in both sessions (see Appendix 1). For each emotion, children received two points for correct expressive and two points for correct receptive, or 1 point for the identification of positive or negative dimensions in both expression and receptive sessions (for example feeling good versus feeling bad), or 0 points for incorrect identification of expressive/receptive. Thus the possible range for the expressive part was from 0 to 8. The same for the receptive part. Internal consistency, considering an aggregate measure of expression and receptive sessions (possible range = 0-16), was good (Cronbach's alpha=.76).

Finally, the children were asked to make inferences about emotions in eight stereotype situations that described emotions common to most people, such as happiness at getting an ice cream or going to the zoo, fear during a nightmare or anger at having a block tower destroyed. There were two stereotype situations for each basic emotion (happy, sad, angry, and fear). For each situation, children were asked to the name verbally the emotions (expressive part) and to identify each face, non-verbally, by pointing (receptive part). Scoring proceeded as in the expressive and receptive sessions (described previously). The possible range for the expressive part was from 0 to 16. The same for receptive part. Appendix 1 shows the eight stereotype situations. In the analyses

below, we considered only the score of the eight stereotype situations (expressive part – range 0 to 16; Cronbach's alpha=.75), since the other sessions resulted very easy for all children.

The total task took about 30 minutes for each child and the children enjoyed during the task. In this study, we did not consider the session that tests the child's emotional competence with respect to their ability to articulate the causes of happiness, sadness, anger, and fear. In addition, we did not consider the session of non-stereotype situations included in the original test. Specifically, in this session children were asked to comment on emotions in equivocal situations where the other person (the protagonist in the situation) feels differently to the child.

Peer-rated Acceptance. A well-validated measure for preschoolers was used to assess children's level of acceptance: the rating-scale, picture socio-metric procedure (Asher, Singleton, Tinsley & Himel, 1979) that provides an indication of each child's degree of being acceptable. In an area outside the classroom, each child was shown individual photos of his/her classmates and he/she was first asked to name about ten of his/her peers, to make sure he/she recognized them. Then, children were asked to sort pictures of their classmates into one of three boxes (see appendix 1) identified by a happy face ("children you like to play with a lot"), a neutral face ("children you "kinda" like to play with"), a sad face ("children you don't like to play with"). Rating values of 3, 2 and 1 were assigned to the happy, neutral and sad face respectively. An acceptance score was computed summing the number of positive (happy face), neutral (neutral face) and negative (sad face) ratings and dividing by the total number of ratings (average ratings) for each class. The obtained average ratings were transformed in z scores within each class for the analyses.

Analytic Strategy

The goal of the present study was to investigate the hypothesis that emotional competence and the quality of teacher-child relationship were related to peer acceptance through children's social behavior. Initially we presented the descriptive statistics. In particular, gender differences were explored with a series of one way ANOVAs among all variables examined in the current study. Moreover, we tested our hypotheses within the SEM framework, that allows to test the relations between teacher-child relationship and peer likability.

For the evaluation of each model tested, we used fit model indices (as they are less sensitive to sample size than the chi-square statistic) (Kline, 2010). Comparative fit index (CFI), root-mean-square error of approximation (RMSEA) with the interval and p value, standardized root-mean-square residual (SRMR) and Akaike information criterion (AIC) were considered for each model. CFI values above .90 were considered as evidence of good fit (Bollen, 1989), as well as RMSEA values lower than .07 (Browne & Cudeck, 1993) and SRMR values lower than .08 (Kelloway, 1998). The chi-square difference statistic was performed to compare the fit of CFA models and to choose the best model.

<div align="center">

Results

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Descriptive Analyses

Preliminary analyses revealed no univariate outliers. The skewness and kurtosis indexes were judged sufficient to meet the assumptions of the analysis (Curran, West, & Finch, 1996).

Mean and standard deviations for each study variable are presented in Table 1. On average, teachers perceived more positive relationships with children rather than conflictual or dependent

relationships. The data also shows that social competence scores were higher than anger-aggression or anxiety-withdrawal scores. In addition, the children showed moderate levels of emotion understanding in the eight stereotype situations. The scores on each measure were similar to those reported in previous research, supporting the parallels between this and other studies (Blair et al., 2004; Chen & Jiang, 2002; Griggs et al., 2009; Palermo et al., 2007).

Analyses of Variance (ANOVAs) were conducted to assess sex differences in the study variables. As shown in Table 1, sex differences were found in emotional competence and anxiety-withdrawal behavior. Girls were rated significantly more able with regard to emotional competence and showed more anxiety-withdrawal behavior. There were no sex differences in any of the other study variables.

Table 1. *Means, Standard Deviations, and Sex Differences for Study Variables*

Variable	Total sample (n = 188)		Boys (n =)		Girls (n =)		F	Partial η²
	M	SD	M	SD	M	SD		
Emotional Competence	11.51	3.17	10.93	3.25	12.11	2.98	6.685**	.03
Closeness	3.74	.61	3.71	.59	3.77	.62	.375	.00
Conflict	1.72	.66	1.77	.70	1.67	.63	.360	.01
Dependency	1.59	.63	1.53	.66	1.65	.60	1.792	.01
Anger-Aggression	2.16	.83	2.23	.93	2.08	.71	1.492	.01
Anxiety-Withdrawal	2.06	.90	1.92	.86	2.21	.91	4.895*	.02
Social Competence	3.91	.96	3.84	.98	3.97	.94	.859	.00
Peer Likability	2.12	.25	2.13	.24	2.09	.25	.180	.00

Note. All variables are unstandardized for interpretation of the table. *$p < .05$. **$p < .01$.

Relations Among the Study Variables

Correlations among the study variables are presented in Table 2. Teacher-child conflict was negatively related to closeness and positively associated with dependency, although teacher-child closeness was unrelated to dependency. In addition, social competence was positively correlated with emotional competence and peer likability. On the other hand, social competence was

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significantly negatively related to dependent and conflictual teacher-child relationships and to anger-aggression and to anxiety-withdrawal behaviors. Moreover, anger-aggression was positively associated with conflict and dependency. Anxiety-withdrawal behavior was associated positively to dependency. Peer likability was only positively related to social competence. Gender was significantly positively related to emotional competence and negatively related to anxiety-withdrawal behavior. Finally, children's age is positively related to emotional and social competence.

Table 2. *Bivariate Correlations Among the Study Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Emotional Competence	_									
2.Closeness	.14	_								
3. Conflict	.04	-.34**	_							
4. Dependency	-.01	.09	.31**	_						
5. Anger-Aggression	.04	-.09	.62**	.21**	_					
6. Anxiety-Withdrawal	-.09	-.31	.26**	.29**	-.02	_				
7. Social Competence	.32**	.25	-.25**	-.24**	-.23**	-.48**	_			
8. Peer Likability	.07	.13	-.07	-.02	-.12	-.10	.25**	_		
9. Gender	.18*	.05	-.07	.10	-.09	.16*	.07	.03	_	
10. Age	.55**	.10	.08	-.09	-.05	.01	.39**	.07	.09	_

Note. Gender was encoded with 0 (boys) and 1 (girls). *$p < .05$. **$p < .01$.

Structural Equation Modeling (SEM)

We tested our hypothesis within the SEM framework because it allowed the use of the hypothesized mediation model and multiple indicators among constructs. In Mplus Version 5.2 (Muthén & Muthén, 2007), we used maximum likelihood estimation and estimated the indirect (mediated) hypothesized relations. Specifically, we conducted mediation analyses with the Confidence Intervals (CIs) method of indirect effects as indicated by Mackinnon, Lockwood, Hoffman, West, and Sheets (2002). This method was used to estimate 95% and 99% CI for the parameter estimate and a CI that does not include zero indicated significant indirect effect. Moreover, we used parcels as indicators of each construct of STRS and SCBE-30. A parcel can be defined as an aggregate (sum or average) of two or more items. Specifically for each constructs, we used the Item to Construct Balance technique that permitted the use of factor loadings as a guide to aggregate items (Little, Cunningham, & Shahar, 2002).

The hypothesized model examined the mediating role of children's socially competent behavior in the relation between the children's emotional competence, teacher-child relationship quality (close, dependent, or conflictive) and peer likability. Specifically, we tested the direct link from children's emotional competence to teacher-child relationships (conflict, dependency, and closeness), from children's emotional competence to children's social behavior (withdrawal, aggressive, and social competent behavior), and from children's emotional competence to peer likability. In addition, we tested the direct link from teacher-child relationship (closeness, conflict, dependency) to children's social behavior (anxiety-withdrawal, social competence, and anger-aggression), and from teacher-child relationship to peer likability. Finally we tested the direct link
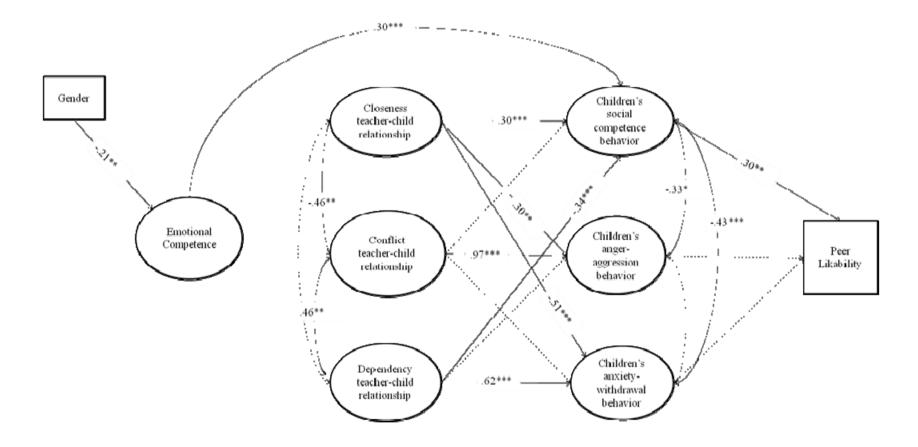
between children's social behavior and peer likability. To account for the influence of gender in the model, we tested direct links from children's gender to all variables considered.

Our results revealed that the pathways from teacher-child relationship variables (closeness, conflict, and dependency) to peer likability and from emotional competence to peer likability were nonsignificant. As part of a specification research to identify a final model, these paths were deleted one at a time (Corbetta, 2002).

The fit of the final model (see figure 1) was good, χ^2=416.276, df =244, p<.0001, CFI=.91, RMSEA=.06 (90% CI=.05-.07), SRMR=.066. Specifically, positive links were found between emotional competence and children's social competence, as well as between social competence and peer likability. Indirect links were found between emotional competence and peer likability through social competence, 95% CI [.001,.169]. Closeness teacher-child relationship was positively related to social competence and dependency teacher-child relationship was negatively related to social competence. Social competence, in turn, was associated to peer likability. Indirect effects were found between dependency in teacher-child relationship and peer likability through social competence, 95% CI [-.197,-.005], and between closeness in teacher-child relationship to peer likability through social competence, 95% CI [.001,.178]. In addition, the conflictual teacher-child relationship was positively and strongly (β= .97, p<.001) associated with anger-aggressive behavior and dependency in teacher-child relationship was positively related with anxiety-withdrawal behavior. Finally, close teacher-child relationship was significantly positively associated to anger-aggression behavior. On the contrary, the correlation analysis showed a non significant relation between closeness and anger-aggression behavior.

We tested an additional model (model 2) in which we fixed to 0 the direct path between conflict teacher-child relationship and anger-aggressive behavior. The results indicated that previous models showed better indices of fit than a model with one parameter fixed to zero (model 2). The chi-square difference between the two models indicated that the first model was statistically improved in comparison to model 2 (ΔS-Bχ^2(1)=60.713, p<.001).

Moreover, we tested another model (model 3) where we fixed to 0 the significant and positive path between close teacher-child relationship and anger-aggression behavior. The results indicated that previous models (or final model shown in the current study) showed better indices of fit than a model with one parameter fixed to zero. The chi-square difference between the two models indicated that the final model was statistically improved in comparison with model 3 (ΔS-Bχ^2(1)=9.205, p<.001). The result of model 3 showed a lower estimate value between conflict teacher-child relationship and anger-aggression behavior (β=.75,p<.001). The bigger relation between conflict and anger-aggression behavior in the final model (see figure 1) may depend on the inclusion of the link between closeness and anger-aggression. In other words, the closeness variable may be a suppressor that increased the magnitude of the relation between conflict and anger-aggression behavior. In fact, when this variable was included in the analysis the magnitude of the relation between conflict with anger-aggression increased (Mackinnon, 2008).

Figure 1. Standardized path coefficients for the final model

Note. The non significant paths between children's gender and emotional competence to other variables were not represented to facilitate the reading of the figure. Non significant paths are shown on the dashed arrows, whereas significant paths are shown on the straight arrows. *p<.05; **p<.01;***p<.001

Discussion

Researchers have argued that teacher-child relationship quality is an important antecedent of social and academic adjustment during preschool age and beyond (Griggs et al., 2009; Ladd & Burgess, 2001; Palermo et al., 2007; Silva et al., 2011). However, few studies have examined the processes linking teacher-child relationship quality and the development of children's social functioning.

The main goal of this study was to investigate the processes by which the qualities of teacher-child relationships (positive versus negative) are related to children's social behavior and peer likability in an Italian sample of preschool-aged children. Because the Italian educational setting involves the same teacher from ages 3 to 6 years, we expected the teacher-child relationship quality to be critically important to the children's future development. In fact, for the majority of preschool/kindergarten children in Italy, this experience represents the first social opportunity outside the family context: a warm relationship with the same teacher, who remains for three years, could help the child to insert gradually and harmoniously into the social world; while a conflictual or dependent relationship could be an obstacle instead of a resource, in the process of social and academic adjustment. Given the continuity and the exclusivity of the teacher-child relationship, the quality of such relationships might play a key role particularly in the Italian context. Indeed, our findings revealed that teacher-child closeness, conflict, and dependence were associated to children's social behavior and peer likability.

Consistent with our prediction that children's behavior would mediate the association between teacher-child relationship quality and peer ratings, the results of the current study showed that children's social competence mediated the relation between teacher-child closeness and dependence, and peer likability. The mediation results demonstrate that the relation between close

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teacher-child relationship and peer likability is indirect through children's social competence. In other words, the emotional connection between teachers and children seems to promote children's competent social behavior, and this behavior in turn, serves as important information for peers. These findings are consistent with the work of Palermo et al. (2007) who found that, in a U.S. sample, teacher-child closeness predicted children's prosocial behavior, which in turn, predicted their peer acceptance. Furthermore, children who tended to display dependence with their teachers (e.g., clinging, problems separating from the teacher) seemed to lack social competence, which in turn, predicted lower peer ratings of acceptance.

Our results also confirmed the role of emotional competence with regard to social competence. Thus, emotional competence may be considered an antecedent of social competence (Denham, 2006; Denham et al., 2003; Denham, Wyatt, Bassett, Echeverria, & Knox, 2009), that in turn is associated with peer likability. In other words, the elements of social–emotional competence are important contributors to a child's success with peers. Thus, the results of the current study are in agreement with current literature that showed a significant relation between emotional competence and social competence as well as between social competence and peer acceptance. Besides these results, additional information revealed that the measure used to evaluate social competence (the SCBE scale) included items of prosocial behavior/empathy (e.g. shares toys, cooperates, comforts others). The literature reported in fact a strong relation between prosocial behavior and emotional competence/peer likability (Denham, 2006; Palermo et al., 2007).

We also found that teacher-child conflict was linked to higher aggression in the classroom. Specifically, conflict in teacher-child relationships strongly predicts children's anger-aggressive behavior. This finding is consistent with Palermo and colleagues' (2007) findings that showed that

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when the affective quality of teacher-child relationship is hostile and conflictual, children are perceived as aggressive and disruptive by teachers.

In keeping with other studies (Arbeau et al., 2010; Henricsson et al., 2004), we analyzed the relation of teacher-child relationship quality to children's anxiety-withdrawal behavior. Our findings demonstrated that children's anxiety-withdrawal was positively related to dependent teacher-child relationship. These results suggested that children with difficulties in separating from their teacher are at risk in developing internalizing behaviors.

In addition, the correlation analysis indicated that children with anxiety-withdrawal behavior showed lower social competence. Similarly, Spinrad et al. (2004) found that children rated as anxious and fearful tended to engage in more solitary play, which in turn, was associated with peer exclusion and rejection. However, we did not find a significant relation between anxiety-withdrawal and peer likability, as results found in study 1 of the current dissertation. In fact in study 1, our results confirmed a significant and negative relation between popularity and anxiety-withdrawal. The different results between study 1 and 2 may be due to the two different informants that we used. In the current study we used peer perception to obtain a popularity measure, whereas in study 1 we considered the teachers' perception.

Other factors, not considered in the present study, might also explain the above results. For example there is literature to suggest that the child's temperament may predict teacher-child relationship and children's social behavior (Myer & Pianta, 2008; Rudasill & Rimm-Kaufman, 2009; Silva et al., 2011). More specifically, inhibited children may develop dependent teacher-child relationship and withdrawal behavior with peers (Griggs et al., 2009; Silva et al., 2011). In addition, behavioral- inhibited or shy children are likely to be low in conflict with teacher and show difficulties participating in classroom activities involving peers (Myer & Pianta, 2008).

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It was surprising that we did not find a significant relation between teacher-child conflict and children's social competence. However, our correlational analyses confirmed that children who demonstrate conflict in relationship with teachers are perceived by teachers to have a lower level of social competent behavior in the classroom.

The present study has several strengths. First, the relations were examined in a culture other than the United States. In fact, it is important to analyze the relations between teacher-child relationships, children's social and emotional competencies, and peer acceptance in different contexts to make sure that the processes work across cultures. This study highlighted the fact that the relations among the constructs were similar in the Italian context and in the United States. Second, we considered data from teacher reports, children and peer-ratings that consented to reduce the common source of variance and to assess the generalizability of our results among two different sources of information into the school environment. Third, we considered all three aspects of teacher-child relationship (conflict, dependency, and closeness), whereas a number of studies have not considered teacher-child dependence (Cornellissen et al., 2002; Pianta & Stuhlman, 2004; Silva et al., 2011). Finally, our results may be related to the continuity over a period of years of teacher-child relationship. Indeed, in the light of the attachment framework, closeness and dependence represented opposite poles. In this regard, the current study contributes to our understanding of the processes that link teacher-child relationship to peer acceptance and supports the idea that a warm and close teacher-child relationship is important to promote children's social behavior, and in turn, positive peer relationships.

Despite these strengths, this study does have some limitations. First, in the current study, the sample size ($n = 188$) was small to allow the use of more complex analyses and to increase the statistical power (Mackinnon, 2008). Future research should consider larger samples to utilize

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complex analysis and understand better the phenomena considered. Secondly, we considered cross-sectional data, which did not allow the evaluation from a longitudinal perspective, necessary to understand the relations over time. Robust findings showed that early negative teacher-child relationship quality may be a predictor of behavioral problems through elementary school (Hamre & Pianta, 2001) and that positive teacher-child relationship quality is related to fewer problems and socially competent behavior at the end of first grade (Pianta, Steinberg & Rollins, 1995). Subsequent research, in the Italian educational context, could examine the long-term relations between teacher-child relationship quality, children's social behavior, and peer acceptance from kindergarten to the school period. In addition, we did not consider the influence of the teacher with regard to young children's readiness for school. Future Italian research could also consider the complex relation between factors within the social-relational context and the academic and social children's adjustment. In fact, the model tested by Palermo and colleagues (2007) suggested an influence of children's social behavior, peer experiences, and teacher-child relationships on early academic readiness. Also the findings of Silva et al. (2011) supported the association between teacher-child relationship quality and school attitudes in preschool. Specifically, children with a positive relationship with the teacher develop higher levels of school liking and motivation toward school. The opposite results are found for children who experience a negative relation with the teacher. Finally, the present work did not consider teacher characteristics, including education, experience, and teacher belief, as a control variables. The literature showed that teachers with more years of education tend to form higher quality relationships with children, and that teachers with more experience of teaching tend to develop lower quality relationships with students (O'Connor, 2010). In addition, previous works demonstrated that teachers with higher levels of self efficacy showed

closer relationships with children, that in turn promote prosocial behaviours in children (Mashburn et al., 2008).

This work provides a model of the processes by which the qualities of the teacher-child relationships is related to children's social behavior and peer acceptance. In fact, during the preschool period, teachers represented a secure base for children to explore their social environment at school (Bergin & Bergin, 2009). This implies that teachers should be aware of the importance of their relationship with children, and that a positive relationship with children could predict socially competent behavior and social adjustment in the classroom (Palermo et al., 2007; Pianta, 2001). Consistent with prior research, the preschool should implement training programs to educate the teachers, to improve supportive, warmth, close, and sensitive relationships with children (Silva et al., 2011).

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Appendix 1

1.Denham's Affective Knowledge test (AKT).

The drawings of four faces depicting happy, sad, angry, and frightened expressions:
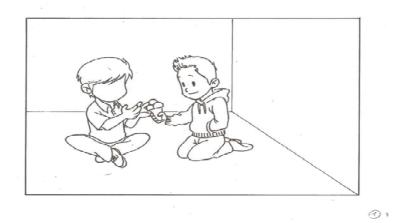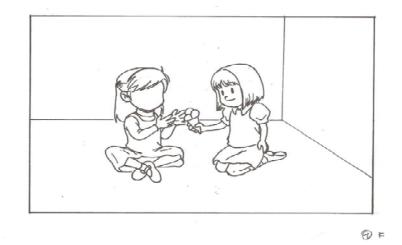
The eight stereotype situations (for boys and girls):

PRIMA STORIA: *"Ciao! Io sono P.. Ecco mia sorella/fratello. Guarda! Mi ha appena regalato del gelato! Mhhhhh..che buono!*"

"Come si sente P.?"

Boys
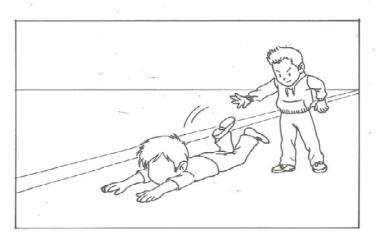
Girls
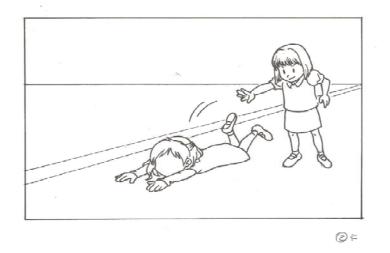
SECONDA STORIA: Mimando P. *"Stiamo camminando per tornare a casa".* Mimare G. "*Adesso ti spingo e ti faccio cadere!"*Mimare G. "*Aihoooo! Mi fa male!! Aihooo!!*"

"Come si sente P.?"

Boys

Girls
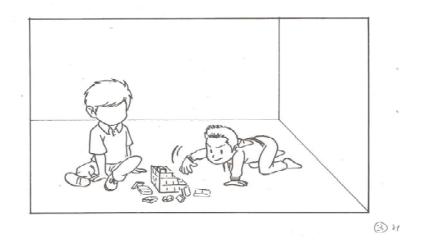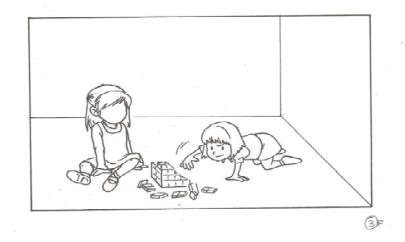
TERZA STORIA: Mimare P. *"Guarda! Sto giocando con le costruzioni e ho fatto questa torre! E ne sono proprio contento! Non è bellissima?"*. Mimare G. "*No! Secondo me è proprio brutta!- Adesso la faccio cadere tutta! E così G. la fa cadere tutta….Crashh…..*"
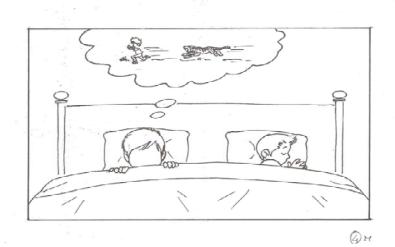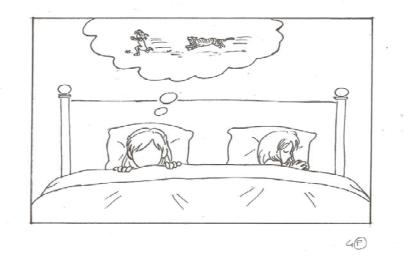
"Come si sente P.?"

Boys

Girls

QUARTA STORIA: *"Shhhhhh!!!! P. e G. stanno dormendo.* Mimare P. *"Oh! Sto sognando! C'è una tigre che mi sta inseguendo!!!! Oh nooooo!!!!"*
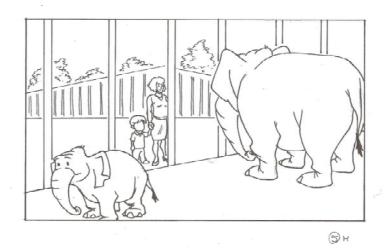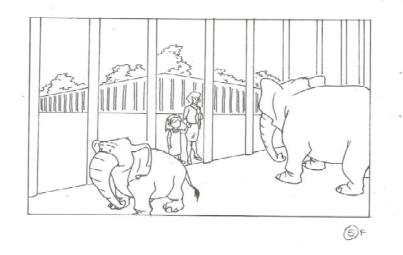
"Come si sente P.?"

Boys

Girls

QUINTA STORIA: Mimare P. *"Ecco che arriva la mamma. Mamma mi porta allo zoo!! Dai vieni G.! Andiamo a vedere gli animali! Mi piacciono tanto gli elefanti. Stiamo andando! Ciao Ciao!!!*
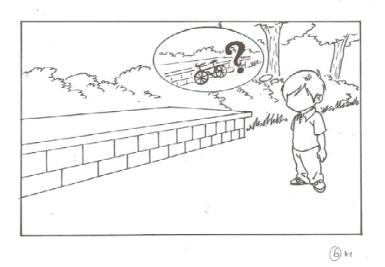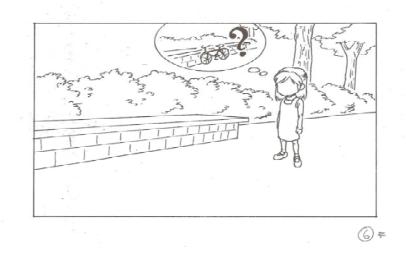
"Come si sente P.?"

Boys

Girls

SESTA STORIA: Mimare P. *"Adesso vado un po' sulla mia bici!! Ma dov'è?? Qualcuno l'ha presa!! Non c'è più!!! Qualcuno l'ha portata via!!!"*
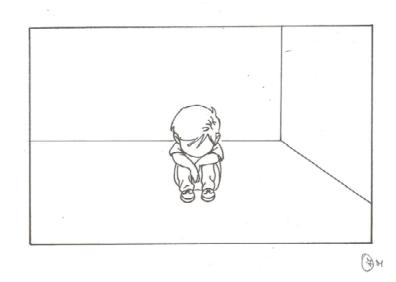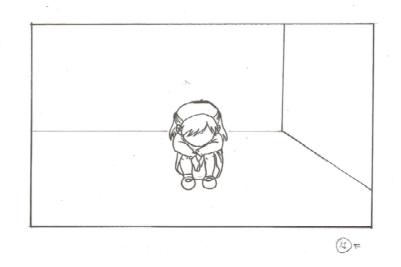
"Come si sente P.?"

Boys

Girls

SETTIMA STORIA: *"P. sta tutto solo"*. Mimare P. "*E' tutto buio qui e non c'è nessuno!!!Ohhhh!!!!!"*
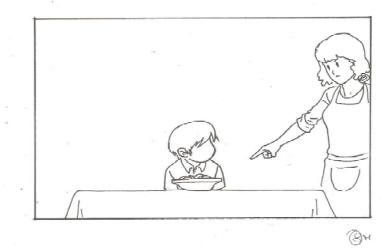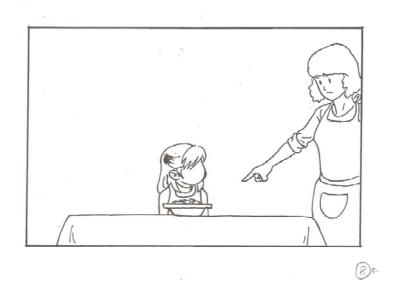
"Come si sente P.?"

Boys

Girls

OTTAVA STORIA: Mimare P. *"Non mi piace mangiare la verdura!! E la mamma dice: La devi mangiare. E basta!! E P. dice: Ugh! No! No!!!"*

"Come si sente P.?"

Boys

Girls

2. The Rating Scale, Picture Sociometric Procedure.

Children were asked to sort pictures of their classmates into one of three boxes identified by a happy face ("children you like to play with a lot"), a neutral face ("children you "kinda" like to play with"), a sad face ("children you don't like to play with").

The Three Boxes:

CHAPTER IV

Study 3. Links among socio-emotional competence, teacher-child relationship and peer acceptance in a longitudinal perspective

Study 3

Links among socio-emotional competence, teacher-child relationship and peer acceptance in a longitudinal perspective

Introduction

In recent years, a good deal of research has been conducted in the domain of early school adjustment, given that problems with school tend to persist throughout elementary school (Hausar-Cram, Durand, &Warfield, 2007; Ladd & Dinella, 2009).

Ladd and colleagues have focused much of their work on the role of peer relationships in children's academic functioning (Buhs, Ladd, & Herald, 2006; Ladd, 1999, 2006; Ladd & Burgess, 1999; Ladd, Herald-Brown, & Reiser, 2008). The quality of peer relationships may be conceptualized as one of the best developmental milestone and index of social adjustment/maladjustment during the preschool period (Hamre & Pianta, 2001; Mostow, Izard, Fine, & Trentacosta, 2002). Indeed, some of the researchers suggest that peer likability and rejection, defined as sentiments of liking or disliking toward individuals in the group, are related to children's academic adjustment/maladjustment, school liking/disliking, and school engagement/disengagement (Buhs & Ladd, 2001; Buhs et al., 2006; Ladd, 2003; Ladd et al., 2008; Parker & Asher, 1987).

In addition to children's academic performance, the quality of peer relationships (or peer likability or rejection) has been related to children's social behavior (DeRosier, Kupersmidt, & Patterson, 1994; Ladd & Troop-Gordon, 2003). A sizeable proportion of literature was designed to analyze the role of behavioral orientations in children's social adjustment or peer acceptance (Ladd, 2003). Three types of children's behavioral orientations are individuated in relation to peer

relationships (Birch & Ladd, 1998; Caspi, Elder, & Bern, 1987, 1988): moving against, away, and toward others. Behavior characterized as moving against others was defined as antisocial interaction styles characterized by anger and disruptive, oppositional, and aggressive behavior. These children may be problematic for teachers in terms of discipline and classroom management (Birch & Ladd, 1998). Children who move away from others showed asocial, anxious-fearful interaction, and lack of interest in relating with others. The transition in preschool/kindergarten may be difficult for these children because they are surrounded by new peers and caregivers (Coplan & Arbeau, 2008; Duda & Minick, 2006). Such children may desire social interaction, but they are, at the same time, inhibited by fear and anxiety (Coplan, Prakash, O'Neil, & Armer, 2004). Finally, children who are moving toward others are cooperative and socially competent with others (peers and teachers). More specifically, social competence promotes positive and effective functioning in preschool (Walker, 2009).

Thus, the above mentioned types of children's behavioral orientations expose children to different experiences and so contribute to their social adjustment. Peer likability has been associated with children who move toward others and, thus, with relatively high levels of children's social competence and emotional competence (Denham, McKinley, Couchoud, & Holt, 1990; Spivack & Howes, 2011). In this direction, Denham and colleagues (1990) reported that preschoolers who showed prosocial behavior and high levels of emotion understanding were relatively liked by peers. More specifically, children who enter school with more social-emotional competence are better able to participate in the classroom and are more accepted by peers than children without appropriate emotional and social competencies (Denham et al., 2003; see also study 2's results of the current dissertation). Moreover, cooperative play with peers (an index of social competence) has been

related to high levels of peer likability (Blandon, Calkins, Grimm, Keane, & O'Brien, 2010; Spinrad et al., 2004).

Many authors have considered the association between aggressive behavior (or children who move against others) and later social and academic maladjustment at the earliest stages of schooling, during the transition from preschool into kindergarten and from kindergarten to primary school (Ladd, 2003). Longitudinal studies have demonstrated that aggressive behavior (i.e. relational aggression) is one of the most important predictors of later social and academic maladjustment, including peer rejection, problematic friendships, and poor school achievement (Bacchini, Affuso, & Trotta, 2008; Crick, Ostrov, & Werner, 2006; Ladd & Price, 1987; Prinstein, Boergers, & Vernberg, 2001). For example, Ladd and Price (1987) found that children who showed more aggressive behavior in preschool were more likely to develop later social problems when they entered kindergarten. Similarly, aggressive behavior in kindergarten was related to the development and continuation of social problems with peers throughout the early years of primary school (Ladd & Burgess, 1999). Moreover, a number of researchers have shown that noncompliant and aggressive behavior and peer rejection in grade school predicts externalizing problems in preadolescence and adolescence (Coie, Lochman, Terry, & Hyman, 1992; Cowan & Cowan, 2004; DeRosier et al., 1994). Thus, children who express higher levels of anger are prone to develop problems in the quality of peer relationships.

Some researchers demonstrated that aggressive and disruptive behavior may foster a conflictual interaction with teachers, which may intensify children's aggressive and disruptive behavior over time (Doumen et al., 2008; Myers & Pianta, 2008; Pianta & Stuhlman, 2004; Silver, Measelle, Armstrong, & Essex, 2005). Hamre and colleagues (2008) found in a sample of preschoolers that teacher's perceptions of students' problem behavior is one of the strongest

correlates of their conflict perception with those students. Moreover, Howes et al. (2000) found that a conflictual student-teacher relationship in preschool is an important predictor of child behavior problems in primary school. Aggressive behavior and conflict in the teacher-child relationship have been shown to act as a risk factors for school engagement across the primary school (Ladd & Burgess, 2001). A study by Hamre and Pianta (2001) showed that a conflictual teacher-child relationship in kindergarten forecast later school problems, such as disciplinary problems or school suspensions, through eighth grade.

Less attention was given to the relation between withdrawal behavior (or children who move away from others) and school adjustment (Hanish, Eisenberg, Fabes, Spinrad, Ryan, & Schmidt, 2004). The existent literature showed that the association between withdrawn behavior and later maladjustment over time is not without ambiguity (Hanish et al., 2004). For example, Boivin et al. (2001) and Rubin et al. (1998) noted that the relation between internalizing behavior (such as anxiety-withdrawal behavior) and peer rejection becomes stronger with age, whereas the relation between aggressive behavior and peer relationships decreased with age (from grade 3 to grade 6). Similarly, Ladd (2006), in a group of children from 5 to 11 years old, argued that atypical behavior, such as social withdrawal, becomes more significant to peer exclusion across the grades. In terms of internalizing disorders, Gazelle and Ladd (2003) found that anxious and withdrawn behavior and peer rejection were linked to belonging to a trajectory of elevated depression from kindergarten through fourth grade.

Moreover, Rubin et al. (1998) found that social withdrawal is unrelated to peer status (peer likability or peer rejection) prior to elementary and middle school. Similarly, study 2's results of the current dissertation showed a non significant relation between anxiety-withdrawal and peer likability in a group of children from 23 to 77 months.

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Conversely, some studies demonstrated that young socially withdrawn children are rated to be less liked by peers than their more socially competent peers (Coplan & Arbeau, 2008; Coplan & Prakash, 2003; Hart et al., 2000; Rubin, Coplan, & Bowker, 2009; Stewart & Rubin, 1995). For example, Coplan & Arbeau (2008) reported that shyness and withdrawal behavior has been associated with peer rejection, exclusion, and victimization in preschool and kindergarten. Thus, strong evidence suggests that shyness-withdrawal carries a greater cost for children: socially withdrawn children are more likely to be rejected and victimized by peers, a combination of negative experiences, that may lead to the development of internalized negative thoughts and feelings (Rubin et al., 2009).

Some researchers suggest that anxious-withdrawn children tend to form dependent relationships with their teachers (Rudasill, Rimm-Kaufman, Justice & Pence, 2006). More specifically, researchers found that socially withdrawn children require more attention, guidance or supervision from teachers to regulate their emotional states, which may lead to develop teacher-child relationships characterized by less closeness and greater dependency (Rubin et al., 2009; Rudasill et al., 2006). Moreover, children whose relationships with teachers are characterized by less closeness and greater dependency may be at risk for school maladjustment (Rubin et al., 2009).

Drawing upon the existing literature and based on results of study 2, the purpose of the current study was to analyze the relation between teacher-child relationship (conflictive, close, and dependent), children's social behaviors (anxiety-withdrawal, anger-aggression, and social competence), and peer likability over time. More specifically, our aims were as follow:
a)to examine the role of children's social competence behavior on peer likability over two waves of data (from 2009 to 2010). We expected that socially competent behavior (or children who move

toward others) represents a component of peer likability and that the positive relation between children's social competent behavior and peer likability would be observable also a year later;

b)to analyze the relation between anxiety-withdrawal and peer likability over time since the available literature showed controversial results. Given the small sample size, our hypotheses regarding the relation between anxiety-withdrawal and peer likability were somewhat exploratory;

c)to examine the relation between anger-aggression behavior and peer likability over time. In keeping with the results shown in literature on this subject, we expected that children who showed more aggressive behaviors would be more likely to develop a lower peer acceptance over the period under consideration;

d)to test the stability or instability of peer likability over a two year period of data since researchers considered peer likability as one the best developmental milestone and index of social adjustment (e.g. Hamre & Pianta, 2001; Mostow et al., 2002).

Methods

Participants

Data was collected as part of a longitudinal study designed to promote children's social adjustment during the preschool period. The findings presented here refer to the two waves (periods) of the project (2009 and 2010 years).

In the initial year of data collection (time 1), the participants were 88 children (46 boys and 42 girls) in the age range of 41 to 77 months (M= 58,65 months; SD = 11, 09) enrolled in one of four classes in one public preschool/kindergarten of Rome (Italy), and their lead teacher (one for each class). Two of the classrooms served younger children (3- to 4-year-olds) and two served older

children (5- to 6-year-olds). At Time 1, the participants were sixteen 3-year-olds (8 boys), twenty nine 4-year-olds (16 boys), twenty five 5-year-olds (12 boys) and eighteen 6-year-olds (10 boys). Kindergarten teachers who participated were all female and were between the ages of 41 to 60 years. Two of them had 11-15 years of teaching experience, one of them had 21-25 years of teaching experience, and the last one had 6-10 years of teaching experience. At time 2, one year later, 48 children (26 boys and 22 girls) in the age range of 53 to 82 months (M = 63 months, SD = 6,7) continued to attend one of the three classrooms of time 1 (4 children moved to the classroom of older children), with the same lead teacher (one for each classroom, the same as for time 1). At time 2 (2010) the missing participants (40 children) moved to different primary schools, and so we were unable to follow them in their new school. In addition, new children entered each class (from 1 to 8) during the second wave of data. These children did not take part in the study during the second year of collection. Parents' informed consent was obtained at time 1, and 100% permission rates were achieved in all classrooms. All the children came from families of middle or middle- high socioeconomic status (SES). The study was reviewed and approved by the Ethics Commission of the Department of Developmental and Social Psychology of Sapienza, University of Rome.

Procedures

Specifically, teachers completed evaluation scales on the quality of teacher-child relationship and children's behavior at time 1 (the same scales of study 1 and 2 of the present dissertation). Teachers completed both scales for each child in their classroom, and each scale took approximately 10 minutes to be completed.

In addition, during the spring semesters at time 1 and time 2 (April and May 2009 and 2010), children participated in a sociometric procedure (the same as in study 2 of the current dissertation). The assessments were conducted individually for each child in a room made available by the preschool (the same for both years) and in the presence of one interviewer (the same for both years).

Measures

Teacher-child relationship at time 1. Teacher perception of relationship with each child was assessed using the Student Teacher Relationship Scale (STRS; Pianta, 2001). The STRS represented the only self report instrument in preschool age typically for assessing teacher perception of relationship to children. The scale was composed of 28 items measured on a 5- point Likert Scale (1=definitely does not apply, 5=definitely applies) and teachers were asked to rate how applicable each statement was to their relationship with each child in the classroom group. The items yield measures of Closeness, Dependency, and Conflict: the scores from each subscale were averaged to create teacher-child closeness, dependency and conflict rates for each child. The conflict subscale consist of 12 items that measured a teacher-child relationship characterized by discordant interaction and lack of positive rapport (e.g. This child and I always seem to be struggling with each other), the closeness subscale included 11 items that evaluated a teacher-child relationship characterized by support and cohesion (e.g. This child spontaneously shares information about himself/herself), and the dependency subscale is composed of 5 items that show a relationship characterized by over dependence of children on teacher (e.g. This child reacts strongly to separation from me). Higher scores on the closeness subscale and lower scores on the dependency and conflict subscales indicate more positive teacher-child relationships. Alpha values for teachers'

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reports in the current sample were as follows: Closeness .71; Dependency .71; Conflict .83. For the present study, since STRS scale were originally written in English, we used the Italian translation conducted by Fraire, Longobardi and Sclavo (2008) through a procedure of back translation. Moreover, we considered only items that showed a good reliability and validity in previous analyses (see study 1 of the current dissertation).

Children's behavior at time 1. Measures of social competence were derived from teacher reports using The Social Competence and Behavior Evaluation Short Form (SCBE-30, LaFreniere & Dumas, 1996) for children in 30-78 months age range. The SCBE-30 comes from the original 80 item-Likert rating scale (LaFreniere, Dumas, Capuano & Dubeau, 1992) and identifies social behavior that arises from ability/inability to regulate affect. The SCBE-30 is composed of 30 items, on a 6-point Likert scale, and three subscales, specifically: the social competence, anger-aggression and anxiety-withdrawal subscales. The social competence subscale is composed of 10 items which indicate prosocial and assertive behavior (e.g. Shares toys with others), the anger-aggression subscale consists of 10 items and describes aggression and impulsive behavior (e.g. Irritable, gets mad easily) and, the anxiety-withdrawal subscale is formed by 10 items and is characterized by sadness, anxiety, inhibition behavior (e.g. Doesn't talk during group activities). The scores from each subscale were averaged to create social competence, anger-aggression and anxiety-withdrawal rates for each child. Alpha values for teachers' reports in the current sample were as follows: social competence .80; anger-aggression .78; anxiety-withdrawal .86. For the present study we used the Italian translation conducted by Ongari, Tomasi e Zoccotelli (2007) for SCBE-80. Moreover, we considered only items that showed a good reliability and validity in previous analyses (see study 1 of the current dissertation).

Peer-rated Likability at time 1 and at time 2. A well-validated measure for preschoolers

was used to assess children's levels of acceptance: the rating-scale, picture socio-metric procedure

(Asher, Singleton, Tinsley, & Himel, 1979) that provides an indication of each child's degree of

likability. In an area outside the classroom, each child was shown individual photos of his/her

classmates and he/she was first asked to name about ten of his/her peers, to make sure he/she could

recognize them. Then, children were asked to sort pictures of their classmates into one of three

boxes identified by a happy face ("children you like to play with a lot"), a neutral face ("children

you "kind of" like to play with"), a sad face ("children you don't like to play with"). Rating values

of 3, 2 and 1 were assigned to the happy, neutral and sad face respectively. A likability score was

computed summing the number of positive (happy face), neutral (neutral face) and negative (sad

face) ratings and dividing by the total number of ratings (average ratings) for each class. The

obtained average ratings were transformed in *z* scores within each class for analyses. The z scores

were used to classify children, at time 1 and at time 2, in: highly accepted if their z score was higher

than or equal to + .70; low accepted if their z score was less than or equal to -.70; and the remaining

children were classified as average accepted (see Ladd et al., 2008).

Analytic Strategy

The purpose of the present study was to examine the relations between the quality of teacher-

child relationship, children's social-emotional behavior and peer likability in a longitudinal

perspective.

We begin by presenting correlational analysis, observed means and standard deviations across two time points, followed by missing data analysis, and then path analysis conducted to test the relations between teacher-child relationship and peer likability at time 1 and at time 2.

As in the majority of longitudinal studies, in the present work there was missing data. Path analysis was tested through Mplus 5.2 (Muthén & Muthén, 2007) using estimation procedure named full-information maximum likelihood (FIML) imputation that handled missing data. FIML is a procedure that does not estimate the missing data, as in the case with mean-or-regression based imputation techniques. In another way, it fits the covariance structure model to the observed raw data for each participant (Enders, 2001, 2006). FIML assumes that the missing data is either missing completely, at random (MCAR) or missing at random (MAR) (Barbaranelli, 2007).

In addition, we conducted mediation analyses with the Confidence Intervals (CIs) method of indirect effects as indicated by Mackinnon, Lockwood, Hoffman, West, and Sheets (2002). This method was used to estimate 95% and 99% CI for the parameter estimate and a CI that does not include zero indicated significant indirect effect.

For the evaluation of the model we used fit model indices (as they are less sensitive to sample size than the chi-square statistic) (Kline, 2010). Comparative fit index (CFI), root-mean-square error of approximation (RMSEA) with the interval and p value, and standardized root-mean-square residual (SRMR) were considered. CFI values above .90 were considered as evidence of good fit (Bollen, 1989), as well as RMSEA values lower than .07 (Browne & Cudeck, 1993) and SRMR values lower than .08 (Kelloway, 1998).

<center>**Results**</center>

Descriptive statistics

Preliminary analyses revealed no univariate outliers. The skewness and kurtosis indices were judged sufficient to meet the assumptions for the analysis (Curran, West, & Finch, 1996).

Zero-order correlations were conducted to determine the relations among and between each teacher-child relationship, social-behavior and peer likability variables. Correlation, means and standard deviations for the overall sample are described in Table 1. We also included correlations between gender and age at time 1 and all variables of interest.

Teacher-child conflict was negatively related to closeness, although teacher-child closeness was unrelated to dependence. No relation was found between conflict teacher-child relationship and dependence teacher-child relationship. In addition, social competence was positively correlated with closeness and peer likability at time 1 and peer likability at time 2. On the other hand, social competence was significantly negatively related to conflict teacher-child relationship and to anxiety-withdrawal behavior. Moreover, anger-aggression was positively associated with conflict and negatively correlated with peer likability at time 2. Anxiety-withdrawal behavior was associated positively to dependence and was negatively related to social competence and peer likability at time 1. Anxiety- Withdrawal behavior and Anger-Aggression behavior were not significantly correlated with each other. Peer likability at time 1 was positively related to social competence and negatively correlated with anxiety-withdrawal behavior. Peer likability at time 1 was unrelated to anger-aggression behavior. Peer likability at time 2 was negatively related to anger-aggression behavior and positively associate with social competence behavior. Peer likability at time 2 was unrelated to anxiety-withdrawal behavior. We didn't find a significant relation between peer likability at time 1

and peer likability at time 2. Finally, age at time 1, was significantly positively related to close and dependent teacher-child relationships. Gender was unrelated to all study variables. These results were confirmed also by analyses of variance (ANOVAs) that demonstrated no sex differences in any of the study variables

Table 1. Bivariate Correlations Among the Study Variables

	1	2	3	4	5	6	7	8	9	10
1.Conflict T1	-									
2.Closeness T1	-.29**	-								
3.Dependency T1	.17	.19	-							
4.Anger-Aggressive T1	.69*	-.11	-.09	-						
5.Anxiety –Withdrawal T1	-.05	-.13	.32**	-.18	-					
6.Social Competence T1	-.28**	.34**	-.19	-.18	-.47**	-				
7.Peer Likability T1	-.21	.31**	-.03	-.11	-.25*	.41**	-			
8.Peer Likability T2	-.29*	.24	.14	-.38**	-.06	.43**	.16	-		
9.gender	-.18	.13	.18	-.17	.01	.07	-.05	.13	-	
10.Age T1	-.06	.35**	.24*	.10	.10	.19	.20	-.05	.01	-
Mean	1.80	3.72	1.60	2.08	2.02	4.00	2.03	2.12	-	58.65
SD	.66	.54	.61	.78	.84	.85	.22	.25	-	11.09

Note. Gender was encoded with 0 (boys) and 1 (girls). $*p < .05$. $**p < .01$. Peer likability at time 1 and at time 2 are unstandardized

for interpretation of the table.

Missing Data Analysis

FIML estimation in Mplus 5.2 was used to handle missing data in our analyses. FIML assumes that the missing data are either missing, completely at random (MCAR) or missing at random (MAR). SPSS 18 was used to test the pattern of missing through the Little's (1988) test for MCAR . The test was statistically significant ($x^2(16) = 59.689$, $p<.001$) indicating that the variables in our analysis did not meet the strict assumption of MCAR. However, by considering the *t* test produced by the program output, the children's age at time 1 ($t(84)=-11.4, p<.001$), closeness at time 1 ($t(79)=-2.7, p<.01$), dependency at time 1 ($t(84)=-2.1, p<.05$), and social competence at time 1 ($t(83)=-2.5, p<.01$) significantly predicted peer likability missing at time 2, suggesting that at least MAR could be supported (Tabachnick & Fidell, 2007). Although we cannot exclude the possibility that our data are not missing at random (MNAR), it must be noted that maximum likelihood estimation relative to other traditional techniques produces less biased estimates of missing values even when the pattern of missing cannot be ignored as in MNAR (Baraldi & Enders, 2010).

Path Analysis

The hypothesized model examined the mediating roles of children's behavior at time 1 in the relationship between the quality of teacher child relationship at time 1 and peer likability at time 1 and at time 2. Specifically we tested the direct paths from the teacher-child relationship variables (closeness, conflict, and dependency) to children's social behavior (social competence, anger-aggression, anxiety-withdrawal), from teacher-child relationship variables (closeness, conflict, and dependency) to peer likability at time 1 and to peer likability at time 2, and from children's social behavior (social competence, anger-aggression, anxiety-withdrawal) to peer likability at time 1 and to peer likability at time 2. Finally, we tested the stability across two time

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points through a direct path from peer likability at time 1 to peer likability at time2. To account for the influence of age at time 1 in the path model, we tested direct paths from children's age at time 1 to all variables considered. Additionally, to account for the influence of gender, we tested direct paths from gender to all variables considered (teacher-child relationships, children's social behaviors, and peer likability at both times), and we estimated the covariance between gender and children's age at time 1.

Our results revealed that the pathways from teacher-child relationship variables (closeness, conflict, and dependency) to peer likability at time 1 and to peer likability at time 2 were non significant. Given the complexity of the model and as part of a specification search to identify the model, these paths were deleted one at a time in the next models (Kline, 2010). The last model (without the non significant pathways from teacher-child relationship variables to peer likability at time 1 and to peer likability at time 2) fit the data well, $x^2(6) = 5,460$, p > .05, CFI=1.00, RMSEA=.001 (90% CI=.001-.13, p >.05), SRMR=.03.

From this model and according to the principle of parsimony (i.e. reducing the model's complexity by increasing the number of degrees of freedom without worsening the fit) (Kline, 2010), the non significant path from anxiety-withdrawal behavior to peer likability at time 2 was deleted. The results indicated that the model (the path from anxiety-withdrawal to peer likability at time 2 deleted) did not decrease the model's fit (ΔS-Bχ^2(1)=0.406, p>.05).
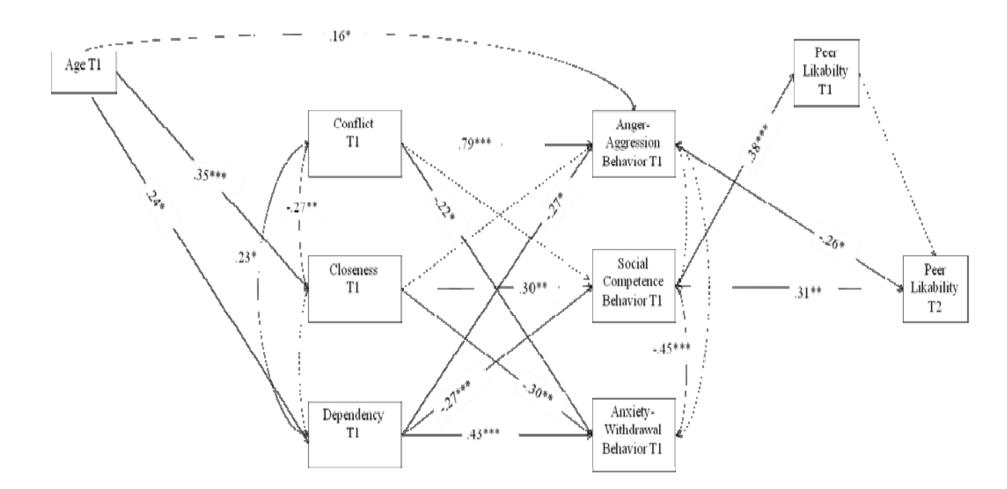
Continuing to follow the principle of parsimony, the path from anger-aggressive behavior to peer likability at time 1 was removed. The results indicated that the model (the path from anger-aggression to peer likability at time 1 deleted) did not decrease the model's fit (ΔS-Bχ^2(1)=1.279, p>.05).

In addition, the non significant path from anxiety-withdrawal to peer likability at time 1 was deleted. The final fit of the model was good, $x^2(9) = 7,703$, p > .05, CFI=1.00, RMSEA=.001 (90% CI=.001-.11, p >.05), SRMR=.04. The results indicated that the model (the path from anxiety-withdrawal to peer likability at time 1 deleted) did not decrease the model's fit (ΔS-B$\chi^2(1)$=0,558, p>.05). Figure 1 depicts the standardized path coefficients of the final model.

Positive paths were found from children's age to dependence and close teacher-child relationships and to anger-aggression behavior. Instead from children's age at time 1, we found non significant paths from gender to all variables considered. Conflict teacher-child relationship was positively associated to anger-aggression behavior and negatively associated to anxiety-withdrawal behavior. Close teacher-child relationship was positively related to social competent behavior and negatively associated to anxiety-withdrawal behavior. In addition, dependent teacher-child relationship was positively associated to anxiety-withdrawal and negatively related to social competent behavior and anger-aggression behavior. Social competent behavior was the only variable significantly positively related to both peer likability at time 1 and at time 2. Anger-aggression behavior was negatively related to peer likability at time 2. A non significant path was found from peer likability at time 1 to peer likability at time 2. Finally, indirect paths were found from close teacher-child relationship to peer likability at time 1 through social competent behavior, ($\beta = .11$, 95% CI [.02, .21]) and from conflict teacher-child relationship to peer likability at time 2 through anger-aggression behavior, ($\beta = -.20$, 95% CI [-.38, -.03]).

In addition, we also tested a model fixing to 0 the parameter from peer likability at time 1 to peer likability at time 2. The results indicated that the second model (one parameter fixed to zero) did not decrease the model's fit (ΔS-B$\chi^2(1)$=0.233, p>.05).

Figure 1. Standardized path coefficients for the final model.

Note. The non significant paths from children's age were not represented to facilitate the reading of the figure. Gender is not reported because unrelated to all variables. Non significant paths are shown on the dashed arrows, whereas significant paths are shown on the straight arrows. T1= variable assessed at time 1. T2= variable assessed at time 2. *p<.05; **p<.01;***p<.001

The change in peer likability over time

The previous model showed a non significant path from peer likability at time 1 to peer likability at time 2. This mean that a single rater or more, changed the perception of their classmates from one time to another. To better understand the distribution of peer likability and the change (or the instability) across two years, children were classified in three groups: high accepted if their z score was higher than or equal to +.70; low accept if their z score was less than or equal to -.70; and the remaining children were classified as average accept (Ladd et al., 2008). For this analysis we considered the 48 children who had participated during the two years of data collection. For the 48 children at time 1 peer likability scores were calculated considering all the total sample ($n = 88$). Table 2 showed the distribution of peer likability separately for time 1 and time 2.

Table 2. Distribution of peer likability separately for two years of data

Groups	Time 1			Time 2		
	Total	Boys	Girls	Total	Boys	Girls
High	10	6	4	10	5	5
Average	21	13	8	25	13	12
Low	17	7	10	13	8	5
Total	48	26	22	48	26	22

Table 2 showed a different distribution in three different groups across two times. However, children are perceived by peers as more average accepted at time 1 and also at time 2. The children who are high accepted and those low accepted are represented by similar frequencies at both times (see table 2).

Since the frequencies of the three groups are different across two times (see table 2), we examined the change or the stability of peer likability for each child over two time. Table 3 showed stability and instability, in terms of decreasing (from high to average, or from high to low, or from average to low) and increasing (from low to average, or from low to high, or from average to high), of peer likability across two years. We found that more than half of children changed their degree of peer likeability from time 1 to time 2. Specifically, we observed more increasing of peer likability than decreasing. This result may confirm the non significant path from peer likability at time 1 to peer likability at time 2. The degree of stability of peer likability is more associated with the average peer likability. More specifically, 11 children were average accepted, 3 high accepted, and 6 low accepted in both years.

Table 3. Stability and instability of peer likability groups across two times

Time 1			Time 2		
Groups	Total		Stable	Decreasing	Increasing
High	10		3	7	0
Average	21		11	4	6
Low	17		6	0	11
Total	48		20	11	17

Discussion

The peer acceptance may be conceptualized as one of the best indices of social adjustment during the preschool period (Hamre & Pianta, 2001; Mostow et al., 2002). Researchers have argued the role of children's social behavior in peer acceptance (DeRosier et al., 1994; Ladd, 2003; Ladd & Troop-Gordon, 2003). More specifically, three types of children's behavioral orientations are individuated in relation to peer relationships: moving against (aggressive children), away (withdrawn children), and toward others (socially competent children).

The main aim of this study was to investigate the relations by which children's withdrawal, social competent, and aggressive behaviors were associated to peer acceptance over the course of

two years. More specifically, the first aim of the current study was to examine the role of children's socially competent behavior with peer likeability over both years of research. The results of the current study showed that socially competent behavior plays an important role in the social group ecology. In other words, more socially skilled children were (at time 1) and became (at time 2) more accepted by classmates. These findings are consistent with study 2's results and with the international literature that found that children's social competent behavior is related to peer likability over time.

The second aim of the current study was to analyze the relation between anxiety-withdrawal and peer likeability over time since the literature showed controversial results. Our results showed non significant paths from anxious-withdrawal behavior to peer likeability in both years. However, our co-relational analyses confirmed a significantly negative relation between anxiety-withdrawal and peer likeability at time 1 and a non significant association between anxiety-withdrawal and peer likability at time 2. This different results may be due to the large attrition rates at time 2. However, playing alone or the lack of social initiation probably did not make these children attractive playmates for other peers. Thus, anxious-withdrawn children may easily become invisible to peers or be on the periphery of the social scene, or may be less engaged with peers (Coplan, Girardi, Findlay, & Frohlick, 2007; Rubin, Burgess, Kennedy, & Stewart, 2003).

Nevertheless, other factors, not considered in the present study, may explain the above results. For example some researchers have suggested that withdrawn children may easily become invisible also to teachers (Arbeau, Coplan, & Weeks, 2010; Evans, 2001; Keogh, 2003; Rimm-Kaufman et al., 2002; Rimm-Kaufman & Kagan, 2005; Rudasill & Rimm-Kaufman, 2009). Future investigations should consider also the teacher' s perception of peer likability of their children in association with peer's judgment.

One issue that was examined in the current study was the relation between anger-aggression behavior and peer likeability over two time. In keeping with the results shown in literature on this subject, we expected that children who manifested more aggressive behavior would be more likely to develop later social problems. The model tested indicated that anger-aggression behavior was unrelated to peer likeability at time 1, whereas we observed a significant negative effect of anger-aggression behavior on peer likability at time 2 (one years later). Angry and aggressive children may be less likely to be accepted by peers at a distance of time. In other words, aggressive behavior seems to have a long term effect on peer acceptance. Our findings, using an Italian sample, are consistent with other work conducted in other international longitudinal studies (Ladd & Burgess, 1999).

The last aim examined in the present work was to test the stability or instability of peer likeability from time 1 to time 2 (one year later). Our results showed a non significant path from peer likability at time 1 to peer likability at time 2. More specifically, we found that more than half of children changed their degree of peer likeability from time 1 to time 2. This means that peers have changed the perceptions of their classmates from one time to another. We know from the literature that at the preschool age children's social status is relatively unstable, given that the social competencies are in the making (Halberstadt, Denham, & Dunsmore, 2001). It is interesting to note the direction of change; we observed more increasing peer likeability rather than decreasing. This result might be interpreted as evidence that children's ability to interact effectively with their classmates is increased from time 1 to time 2.

The present study has several strengths. First, the study analyzed two waves of data. In fact, to study processes the best test should consider longitudinal data which gives information on the direction of the relationships between teacher-child relationship, child's social behavior and peer

likeability. Second, we considered data from peer-ratings and teacher reports that permitted the reduction of the common source of variance and to assess the generalizability of our findings across different sources of information.

Despite these strengths, this study does have some limitations. First, in the current study, the sample size ($n = 88$ at time 1 and n= 48 at time 2) was too small to allow the use of more complex analyses. Future research could consider larger samples to utilize complex analyses and so lead to more definite conclusions regarding these relations. In addition, the preschool considered was mostly composed of classes of three and four, or five and six year olds. This means that, from time 1 to time 2, older children passed on to primary school and younger children stayed another year in kindergarten. These phenomena could explain the large attrition rates from one time to another.

This work provided a longitudinal model of the associations by which children's social behaviors are associated to peer likability. Children who showed positive interaction with peers and cooperative play tended to be more accepted by peers than aggressive children, who tended to have negative peer contacts and to engage in disruptive play (Seven, 2010). This implies that children who are able to navigate effectively the preschool social environment are in a better position to benefit from these early experiences as they progress to primary school. Conversely, the transition to primary school is more critical for anxious-withdrawn and anger-aggressive children who meet difficulties in the preschool/kindergarten social life. Thus, interventions and teachers' trainings should start as soon as possible (Doumen et al., 2008).

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CHAPTER V

General Conclusion

General Conclusion

A perspective to study the children's social functioning is the "child-by-environment model". The model assumes that children's social functioning is influenced by their individual characteristics and by their social relationship with others (e.g. parents, peers, or teachers).

Peer acceptance may be conceptualized as one of the best indices of children's social functioning and adjustment during the preschool period. However, few researchers have analyzed the complex relations among predictors of peer acceptance (e.g. children's individual characteristics and teacher-child relationship) in preschoolers.

In keeping with the child by environment model, the purpose of the present dissertation was mainly to investigate the role of children's individual characteristics and their relationship with children's social functioning. More specifically, the present dissertation aimed at analyzing the processes by which the quality of teacher-child relationship (close, conflictive, or dependent) and children's social-emotional behavior (anxious-withdrawal, social competence, anger-aggression) were associated to peer likeability in a sample of preschool-aged children.

The current dissertation was divided into three different, but related, studies. Study 1 aimed at evaluating the factorial validity of the Student-Teacher Relationship Scale (STRS) and the Social Competence and Behavior Evaluation Scale (SCBE) through an exploratory factorial analysis (EFA) and a confirmatory factorial analysis (CFA). To date, no Italian study has examined the factorial validity of the scales, using both factorial analyses, in children aged from 3 to 6 years.

Study 2 aimed at examining the relation between the quality of teacher-child relationship (using STRS scale), children's social behavior (using SCBE scale), and peer likeability considering multiple informants and multiple methods. Specifically, we examined whether the quality of

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teacher-child relationship was indirectly related to peer likeability through children's social behavior.

Study 3 aimed at testing the relations between the quality of teacher-child relationship, children's social behavior, and peer likeability across two waves of data. Less attention was given to literature relating to withdrawal behavior and social adjustment over time. Given the small sample size, our hypotheses regarding the relation between anxiety-withdrawal and peer likeability were somewhat exploratory.

Our findings revealed that the modified three-factor versions of the STRS and SCBE-30 scales can be considered valid instruments for examining the quality of teacher-child relationships and children's social behavior. The original structures of the STRS scale with three correlated factors (conflict, closeness, and dependency) and of SCBE-30 scale with three correlated factors (social competence, anger-aggression, and anxiety-withdrawal) were replicated. The results of the current study also underlined the relation between the STRS and SCBE scales with the teacher's perception of popularity and rejection. Contrary to other literature on this topic, our results demonstrated a stronger relation between anxiety-withdrawal and rejection perceived by the teacher than the relation between anger-aggression and rejection.

In line with other international research, the current work confirmed the processes by which the quality of teacher-child relationship (positive versus negative) may predict children's social behavior and peer likeability. The positive emotional connection between teachers and children promoted children's competent social behavior, and in turn, social competent behavior resulted as the only behavior related to peer acceptance. In addition, when the quality of teacher-child relationship is negative and conflictive, children are perceived as aggressive and disruptive by

teachers. Our findings also demonstrated that children's anxiety-withdrawal was positively related to dependent teacher-child relationship.

The results of the longitudinal study showed that socially competent behavior play an important role over time. The greater social competence displayed by children during time 1 and their progress during time 2, the more acceptable were they by their classmates. An important result regarded the effect of aggressive behavior on peer likeability. In our sample, aggressive behavior showed a long term effect on peer acceptance. Moreover, our results demonstrated that anxiety-withdrawal behavior was not related to peer likeability over time. Finally, we examined the stability and instability of peer likeability, considered across two time. Specifically, our result showed an increase of peer likeability rather than a decrease. This result may be interpreted as evidence of children's ability to interact effectively with their classmates over a period of time.

Despite these results, this study does have some limitations. First, in the longitudinal study, the sample size was too small to obtain final conclusions regarding the relations over time. Future research could consider larger samples to understand better the phenomena considered.

In addition, we did not consider the children's school readiness. Future Italian investigations should research the relation between factors within the children's social-relational context and children's academic and social adjustment. In fact, the findings of international literature supported the association between the quality of teacher-child relationship and school attitudes in preschool and over time.

Moreover, future Italian studies could consider other individual characteristics in children that might be related to children's social functioning. The literature suggests that temperament may be an important predictor of teacher-child relationship and children's social behavior. For example,

it was demonstrated that inhibited children may develop a dependent teacher-child relationship and have difficulty playing with other classmates.

In conclusion, the present dissertation suggests the importance of giving systematic attention to the study of teacher-child relationship and of children's social behavior, beginning with the first years of kindergarten, through instruments widely used in international research. In addition, this present work demonstrated that children who showed close, warm interaction with teachers and cooperative play with peers, tended to be more accepted by other children, while aggressive or withdrawn children , tended to have negative relationships with teachers and to engage in disruptive play with peers. Children who are able to navigate the preschool environment effectively may benefit from these early social experiences as they enter primary school. Conversely, the transition to primary school may be more critical for anxious-withdrawn, or angry-aggressive children, who meet with difficulty in the preschool/kindergarten's social arena.